S. Hrg. 99-213

STATUS OF BUREAU OF THE CENSUS PLANNING FOR THE 1990 DECENNIAL CENSUS

HEARING

BEFORE THE

SUBCOMMITTEE ON
ENERGY, NUCLEAR PROLIFERATION, AND
GOVERNMENT PROCESSES

OF THE

COMMITTEE ON GOVERNMENTAL
AFFAIRS
UNITED STATES SENATE

NINETY-NINTH CONGRESS

FIRST SESSION

JULY 17, 1985

Printed for the use of the Committee on Governmental Affairs

U.S. GOVERNMENT PRINTING OFFICE
52-631 O WASHINGTON : 1985

S401-44

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STATUS OF BUREAU OF THE CENSUS PLANNING FOR THE 1990 DECENNIAL CENSUS

WEDNESDAY, JULY 17, 1985

U.S. SENATE,
SUBCOMMITTEE ON ENERGY, NUCLEAR
PROLIFERATION AND GOVERNMENT PROCESSES,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Washington, DC.

The subcommittee met at 1:37 p.m., in room SD-342, Dirksen Senate Office Building, Hon. Thad Cochran (chairman of the subcommittee) presiding.

Present: Senators Cochran and Glenn.

OPENING STATEMENT OF SENATOR COCHRAN

Senator COCHRAN. The subcommittee will please come to order. Today, we are pleased to have with us officials of the Bureau of the Census to testify on planning which is now under way for our Nation's bicentennial census.

Of course, the census is required by the Constitution to determine the apportionment of seats in the U.S. House of Representatives. However, census data is an invaluable tool for all levels of government, as well as private industry and the academic community. Approximately $100 billion in Federal and State funds are distributed on the basis of the census data. Therefore, the accuracy and timeliness of the data published by the Bureau are extremely important and affect all of us.

Beyond its use in distribution of funds, the data provided by the Census Bureau serves as a basis for many important decisions and policies adopted by all levels of government. The detailed characteristics of the population, its housing, income, and ethnic origin help to determine where there are human needs so that we in the Congress and the administration can attempt to address them.

Census data also provides us with information on national trends in migration of the population, its age and standard of living. In effect, we can use census data to paint a statistical picture of the various components of our population and the changes since the previous census data was compiled and tabulated.

The 1990 census will be the 21st census in an unbroken chain since our first census was taken in 1790. If the Bureau's plans are implemented, it will be a highly automated and statistically sophisticated operation.

Data that will be derived from the 1990 census will serve as a basis for decisions that will take this country into the 21st century.

The Bureau has a long history of performing its difficult and critical tasks very well. I applaud them for this legacy and look forward to working with them as preparations for 1990 are made. I hope the witnesses today will provide us with an understanding of their plans for the 1990 census and how these plans will improve the accuracy of the data and ensure that everyone is counted.

I would like to welcome Dr. John Keane, who is Director of the Bureau of the Census. He is accompanied today by Mr. Peter Bounpane, Assistant Director for Demographic Censuses. He is the man who has direct responsibility, as I understand it, for the conduct of the 1990 census.

Dr. Keane, I appreciate very much your providing me with a prepared statement in advance of the hearing. It will be included in full in the record.

We appreciate your cooperation with the subcommittee.

I also appreciate having the senior Democratic member of the subcommittee, Senator John Glenn, my friend from Ohio, here.

Senator, do you have any opening statement or comments?

OPENING STATEMENT OF SENATOR GLENN

Senator GLENN. I do, indeed, Mr. Chairman. Before I begin my brief remarks, I just want to commend you for having these hearings, chairing our Senate Subcommittee on Energy, Nuclear Proliferation, and Government Processes, which is what this topic falls under, of course. We have a broad mandate on this committee, one that is very interesting. I certainly look forward to a very good working relationship with the chairman, and his staff and pledge my full cooperation to carrying out the committee's legislative mandate, including this one.

I must say, I have a sense of sort of deja vu, I guess, about the hearing today, because about 10 years ago, give or take a year in that estimate, we had a similar meeting. I hate to admit that I have been here that long. I am on my 11th year, but I hadn't been here all too long, and we were having a very similar hearing on getting ready for the 1980 census.

I know I thought that would be a very uncomplicated and very mundane type of operation. The more we got into it, the more interesting it became because of some of the things that the chairman has already mentioned.

Preparing to have a census is not a big, sexy, attention-getting issue. But it is so important for the future of the country, and I don't say that lightly. It truly is. The population count required by the Constitution is extremely important because it is used to apportion seats among the States in the House of Representatives, No. 1; it is also used to provide the very essential data to determine congressional districts and potential redistricting of State legislatures.

The census is just more than a population count, also. It responds to a wide range of social and economic information needs in both the public and private sectors.

For example, census data help identify where the markets are, how many people need schools, jobs, housing, and transportation. Population and other socioeconomic data, such as personal income statistics, are used to distribute billions upon billions of Federal and State dollars through formula grant programs.

Those people don't realize that we are talking about the implementation of the formulas that we vote out here trying to do good things for people wherever they may be around this country. But most of the allocations are done on the basis of census data. It is so important that this thing be done right and be done properly.

I did have some experience in the past involvement on this subcommittee, and I can appreciate the challenges involved in collecting and processing, compiling this massive amount of material. For the most part, the Census Bureau deserves our full praise for a job well done in executing the 1980 census.

Data was collected from over 226 million people in 88 million housing units in this country. There were some major problem areas that came up during the census of 1980. In certain cases, significant delays were experienced and the public dissemination of data collected. You can give us chapter and verse on that, I am sure.

Census type of information quickly becomes outdated in our ever-changing society. Government policymakers and private sector businesses relying on dated figures are susceptible to erroneous decisions. Another problem concerns the accuracy of the Census Bureau population counts, particularly with respect to minorities, and that, of course, led to several legal challenges. I'm not sure we are through all those yet, are we? Do we still have some cases in the courts on that?

Mr. Keane. Some are still pending.

Senator Glenn. In my own State of Ohio, the city of Cincinnati and the Scioto County Board of Commissioners have challenged the court on those issues. I don't think those are still hanging fire. At least I haven't heard recently.

Mr. Keane. The one in Scioto is. It is part of a consolidation.

Senator Glenn. OK.

It is paramount to have reliable figures available in a reasonable timeframe. I repeat that, reliable figures in a reasonable timeframe so that Federal and State—because many States rely on these figures, also—assistance allocation formulas can be effectively determined.

So I will be interested in learning how the Census Bureau plans to rectify both of these issues in the 1990 census. They are issues that need to be corrected, reliable figures in a reasonable timeframe.

Besides these problems, there are a host of other decisions which must be undertaken very soon to prepare for the upcoming census. I think the report for the subcommittee prepared by the CRS, the Congressional Research Service, highlights a number of these issues. The chairman already referred to that and pointed out its significance.

One question I think we have to pay close attention to, and I'm sure you will get into it today, is, how come 10 years later we are now able to utilize better automated data processing technologies to reduce the manual and labor-intensive duties required in collecting and handling and processing the wealth of information.

The General Accounting Office has indicated that a greater use of devices such as microcomputers and optical scanners and bar coding machines could achieve significant cost savings while reducing time lags. In making a decision as to what types of automated systems are most advantageous to their needs, the Census Bureau must consider the machines' compatibility with the questionnaire form to be used. That gets into a whole other area. I am sure the questionnaire is always at issue when we have a census: Are you getting into too much of violating the privacy of the individual in trying to collect enough information so that we have the information we need?

Moreover, while the functional structure of the questionnaire must be addressed, a larger issue surrounds the quality content of the questions to be asked and how those questions are framed, because we may get different answers depending on how the question is framed.

I know there are a number of options under study, and I will be following these as time goes by, and I am sure as the chairman and the other members of the committee will be, too. As I understand it, you are going to make some test runs over the next couple of years. You did that before, and there were some variable answers that came out of those test runs. You interpreted them several ways. I hope we learned from the last census how better to do our test runs this time around and let them serve as lab experiments with the new methodologies and technologies. If successful, these innovative mechanisms, then, could result in a census that is more precise, more expeditious, and more cost-effective than its 1980 predecessor. It would, indeed, be quite an achievement worthy of its bicentennial status. So we look forward to your testimony.

Unfortunately, Mr. Chairman, I am involved in the conference between the Senate and the House on the Defense Authorization Bill and will not be able to stay too long, but I did want to be here, certainly, to welcome our witnesses today here, and I just want to pledge my support along with you to these people in trying to work out in advance the very best we can do on this upcoming census.

I would welcome that earlier on a basis through committee action or committee staff here, or I am sure the chairman will join me in welcoming personal contacts with us so that we can help out. We want to help out in this country. We are not here to jump on you all the time. Let's work out the problems here and let us help you at this end of the avenue, if there is anything we can do to help. Thank you, Mr. Chairman.

[Senator Glenn's prepared statement follows:]

PREPARED STATEMENT OF SENATOR GLENN

Before I begin my brief remarks, I would like to commend my distinguished colleague from Mississippi for holding what is his first hearing in his capacity as Chairman of the Senate Subcommittee on Energy, Nuclear Proliferation, and Government Processes. I look forward to a healthy working relationship with the Chairman and his staff and pledge my full cooperation in carrying out the Subcommittee's legislative mandate.

The decennial population count, required by the Constitution, is extremely important because it is used to apportion seats among the States in the House of Representatives and also to provide essential data to determine Congressional districts and potential redistricting of State legislatures. However, the census is much more than just a population count. It responds to a wide range of social and economic information needs in both the public and private sectors. For example, census data help identify where markets are, how many people need schools, jobs, housing, and transportation. Population and other socio-economic data, such as personal income statistics, are used to distribute billions of Federal and State dollars through formula grant programs.

As one familiar with the census operations from my past involvement on this Subcommittee, I can appreciate the challenges involved in collecting, processing, and compiling this massive amount of material. For the most part, the Census Bureau deserves our praise for a job well-done in executing the 1980 census. Data was collected from over 226 million people in 88 million housing units. Nevertheless, there were a couple of major problem areas. In certain cases, significant delays were experienced in the public dissemination of data collected. Since this type of information quickly becomes outdated in our ever-changing society, government policymakers and private sector businesses relying on dated figures are susceptible to erroneous decisions. Another problem concerned the accuracy of Census Bureau population counts, particularly with respect to minorities, leading to several legal challenges. In my own State of Ohio, the City of Cincinnati and the Scioto County Board of Commissioners have been involved in such lawsuits. It is certainly paramount to have reliable figures available in a reasonable timeframe so that Federal (and State) assistance allocation formulas can be effectively determined. I will be interested in learning how the Census Bureau plans to rectify both of these issues in the 1990 Census.

Besides these problems, there are a host of other decisions which must be undertaken soon to prepare for the upcoming census. I think that the report for the Subcommittee prepared by the Congressional Research Service highlights a number of these issues and their significance.

One question that I will pay close attention to is the utilization of automated data processing technologies to reduce the manual and labor-intensive duties required in collecting, handling, and processing the wealth of information. The General Accounting Office has indicated that a greater use of devices such as microcomputers, optical scanners, and bar-coding machines could achieve significant cost-savings while reducing time lags. In making a decision as to what types of automated systems are most advantageous to their needs, the Census Bureau must consider the machines' compatibility with the questionnaire form to be used. Moreover, while the functional structure of the questionnaire must be addressed, a larger issue surrounds the quality content of the questions to be asked. Again, I know there are a number of options under study and I will be monitoring the Census Bureau's actions on these items.

The test runs to be conducted in the next two years will serve as laboratories to experiment with new methodologies and technologies. If successful, these innovative mechanisms could result in a census more precise, more expeditious, and more cost-effective than its 1980 predecessor. It would indeed be quite an achievement worthy of its Bicentennial status.

Senator **Cochran**. Thank you very much, Senator, and we appreciate very much you being here and participating as you are in the work of this subcommittee.

Before recognizing and calling on Dr. Keane for a statement to the subcommittee, let me reiterate and emphasize the sentiment expressed by Senator Glenn about the role of this subcommittee in connection with the taking of the 1990 census.

We have legislative jurisdiction over the Bureau of the Census in this subcommittee, and if there are any changes in the authority granted by the Congress to the Census Bureau for the purpose of taking the census, making it accurate, making it reliable, then we need to know about your reaction to it, your thoughts concerning the legal authorities that currently exist and whether or not there are any changes that need to be made.

I notice, for instance, that in a review of your statement and some of the background material which I have read prior to the hearing, the 1990 census is going to fall on a Sunday. Do we need to change that? Are we going to have problems because of the fact that traditionally here in America, that is the day that a lot of people are going to be setting aside for things other than responding to a census?

Is that a problem? We need to know about these things well in advance so we can work in a cooperative way with you and make sure that this thing is a success, and we can't waste a lot of money taking the census. Last time, the census cost $1.08 billion. That is a lot of money. Maybe we didn't spend enough. Maybe that is too much. We need to know whether we are getting our money's worth; whether we are taking advantage of all the efficiencies that we can possibly have in the system.

That is why this hearing is being conducted, to acquaint us better with the processes and to see what we need to do to make sure we get the job done and done right.

I guess my first question, after I hear from you is, do you know of anybody in the Government who can count? [Laughter.]

If you do, we ought to hire them, get them working right now in preparing for this 1990 census.

Senator GLENN. That rules out Congress. [Laughter.]

Senator COCHRAN. That means you can't hire any of us, well, some of us, up until 1990. I am up then.

When are you up, John?

Senator GLENN. Next year, Senator. Contributions? [Laughter.]

Senator COCHRAN. Post Office box? [Laughter.]

We have a full statement from you, Dr. Keane. It will be made a part of the record, as I said, in full. Let me encourage you to make such summary comments as you care to so we will have a chance to ask you some questions.

You may proceed.

TESTIMONY OF JOHN KEANE, DIRECTOR, BUREAU OF THE CENSUS, ACCOMPANIED BY PETER BOUNPANE, ASSISTANT DIRECT FOR DEMOGRAPHIC CENSUSES

Mr. KEANE. Thank you, Mr. Chairman. I would like to join Senator Glenn in commending you for holding this hearing. I endorse this sentiment. He just beat me to it.

We are particularly pleased at the Census Bureau that you in your chairmanship role and Senator Glenn would come here and show your interest in the most telling kind of way. Since you have my statement, I thought it might be appropriate if I just gave kind of a 6 to 8 minute overview of some of the highlights, especially talking about the 1980 census: what was good about it, what was not so good about it, and the implications for doing a better job in the 1990 census.

The 1980 census had some notable successes. Among other things, it had broad public support, very critical to a good census. The count was improved. We made our legally mandated reports on time.

For some of the others, the timing needs to be improved. We produced more date products than ever before, and particularly for areas where there was notable improvement, small geographic areas I am talking about.

By the same token, we ought to acknowledge problems, and we did have some. There were the delays that have already been cited in disseminating some of our data reports. There were delays and inconsistencies in our geographic materials. Maps are vital to doing a census, and we didn't turn them out as fast nor as well as we hope to do in the future, and are taking steps to do.

And we do have certain temporary office problems that are of concern to us. We know what they are, and we can talk about those perhaps later.

Now recognizing that overview, we have approached the 1990 census planning in a three-pronged way. We held extensive internal reviews, a series of studies on the most vital areas. We have extensive external consultations, so we have looked outside, particularly among the user communities, and there is no more important user community than you in the Congress, and of course, you are our legislative authority.

Finally, test censuses. Test censuses aren't just a test here or there. They are a program of test censuses so that one relates to another; and sometimes we test the same thing two or three times.

Following the test censuses—there is a National Content Test in 1987—comes a full dress rehearsal, which, in an analagous kind of way, is just that.

Now, then, what the planning process develops, and what it has already, is that there are a number of alternative approaches by which we might improve on the decennial census. So how do we decide among those alternative approaches that are suggested in this census?

I suggest that these are the criteria that we are using, and there are six: One, of course we have to meet the legal mandates for releasing census data, and these are essentially two. By December 31, 1990, the Census Bureau Director must report the count for the Nation to the President. By April 1, 1991, the Census Bureau must report the individual State counts to the State. So we are driven by those two dates. We honored those in 1980 and, of course, will in 1990.

Two, dissemination of the other 1990 census counts and reports in a timely manner.

Three, you have already raised the issue of cost. Adjusted for inflation, to not permit the unit cost to go above 1980.

Four, maintain that high level of accuracy that we had. It is not the overall level of accuracy that seems to be the concern of those who watch the Census Bureau, observe us, and of us inside, so much as to reduce the difference between one population sector versus another, what we refer to as the "differential undercount"; to reduce the differences between sectors. So that is a form of the census goal.

Five, strike the proper and practical balance between the data needs on one hand and the time required for respondent cooperation on the other hand. If we ask too many questions or we ask them in a complicated way, it will take too long, and perhaps otherwise turn off our respondents.

Six, and finally, maintain confidentiality. There is no more important goal to the 1990 census than to maintain confidentiality, and I would share with you that there is no more shared value within the culture of the Census Bureau than confidentiality. It runs broadly; it runs deep; it runs recurring.

So that leads us, then, to the 1990 plans, which, of course are not finalized at this point. Were they to be finalized at this point—and I could tell you so and what they were—you would have legitimate reason for questioning how well we have done our planning and whether or not we have not foreclosed on some options that we ought not to have.

I will talk about three areas under the 1990 plans. The first is automation. It is an obvious area for the Census Bureau to seek and to utilize, and we are.

The backdrop is that there was too much paper and too much people involvement in the censuses in the past, and that includes the 1980 census. So we are looking for automation. We want to begin earlier; we want to use more of it. Precisely where and when are issues that still have to be resolved, and they are tied to the test censuses that we are doing, as well as some other studies.

In the procedures area of our 1990 plans, first, is the Jersey City test that is just winding down now. We tested a two-stage sample, a two-stage census. In other words, a questionnaire goes to all the households in the country that asks the items that we want everyone to answer, the so-called 100 percent count, and then rather than asking, sending at the same time a questionnaire to a smaller portion of the population which would ask more questions, we send that portion of the population a second questionnaire later to see if it would work better; to look for a better way to accomplish the same goal.

Another area we are testing is new procedures for improved mail delivery. Next year, in our east-central Mississippi test census, that will be one of the focal areas.

Finally, I might mention the area of personnel. Of course, we retained, we had positions for something in excess of 300,000 temporary people in connection with the 1980 census. That is a tremendous challenge, and we are looking for better ways, as we mount our 1990 plans, to recruit those people, hiring, training and especially to retain them.

Finally, the questionnaire content. The content is that delicate balance, again, between the information needs on one hand and so many constituencies with such legitimate interests and wanting us to ask either more questions, additional questions, or new questions and always cognizant of the lengthy questionnaire. NASA is not the only one in the space business. So is the U.S. Census Bureau, and that questionnaire is a very, very precious instrument, and as those respondents are a value to us. We know we have so much time, and how to make the best use of that time in a national interest is an abiding concern.

Of course, we are essentially limited by some constraints that are key, and I will mention the most key and acknowledge what has been acknowledged already. That there are certain mandated data, that are necessary to administer the national, State and local government programs that are tied to Census Bureau data.

Of course, then, we want to retain, from a continuity standpoint, the most important characteristic of the population and of the housing stock.

So by way of a wind-up, a closing sentiment, we have come a long way since that first census in 1790. That was the one that

Thomas Jefferson was in charge of, and George Washington said he didn't believe that there were only 3,929,000 people in the country. He thought for sure there were 4 million. So perhaps that was the first of the alleged undercount observations.

As you pointed out, this is an unbroken chain. There is not a major country in the world that can cite an unbroken chain, nor one as long as this, as we know a modern day census. It is something to think about, but I know to the two of you that I don't have to emphasize this. Your sentiments have already expressed that.

We find that very reassuring, and it will be helpful to all of us.

An eminent statistician of world class named William Kruskal, of the University of Chicago, in one reference talked about the decennial census in the United States as understanding our national self and it led us, then, to act more wisely with reliable information. Perhaps our plans and surely this kind of review are likely to contribute to that sentiment.

With my colleague, Mr. Bounpane, we are ready to address any questions that you might have, and certainly any comments.

Senator COCHRAN. Thank you very much.

I noticed that you referred to some litigation that resulted from the 1980 census, and I know one of the lawsuits was filed because of some adjustments that were allegedly responsible for Florida getting an extra Member of Congress. Indiana felt aggrieved because of the fact that the adjustment had that result.

Is this one of the lawsuits still pending, or have they resolved that now? Indiana had a lot of problems in trying to find out not only how many Congressmen, but who the Congressmen are.

Mr. KEANE. Being a native of Indiana, there are some Members of Congress finding that out who asked me in an earnest kind of way. It has been resolved, and rather recently, and favorable to the Census Bureau.

Senator COCHRAN. What about the people of Florida and Indiana? Is it favorable to them, too? [Laughter.]

Your decision stood? The court did not disturb the decision made by the Bureau of the Census? Is that right?

Mr. KEANE. The results sustained our position.

Senator COCHRAN. I am interested in that. I think it is interesting to observe that the Constitution mandates this count be made and the report be given to the President. The provision is that all inhabitants should be counted, and the apportionment of House seats in the U.S. House of Representatives is made on the basis of the counting of inhabitants in each State.

Some may think that only citizens who are present within the boundaries of the United States are counted to determine how many representatives a State will have in Congress, but that is not really accurate; it is how many inhabitants. We are talking about illegal aliens; we are talking about citizens. Every person, every human being within the boundaries of the State is counted for that purpose; is that correct? Is my understanding accurate on that?

Mr. KEANE. Your understanding is accurate.

Senator COCHRAN. When you do make the count, then, do you present a report to the President that includes both the number of inhabitants as well as the number of citizens, or just the number of inhabitants?

Mr. **Keane**. We give the count for the country, total inhabitants.

Senator **Cochran**. You don't make any distinction? Do you ask people as you count them whether they are citizens or not?

Mr. **Keane**. We do not, not in the census.

Senator **Glenn**. Would the Senator yield?

Senator **Cochran**. I would be happy to.

Senator **Glenn**. To be blunt about it, how do you watch inhabitants? People avoided being counted in the last census because it might show up they were illegal in the country. We wound up with several million people along our southwestern borders who didn't want to be counted. They avoided the census. I don't know how you take care of that, but do you have plans to deal with that this time?

Mr. **Keane**. It is an ongoing challenge that is getting a lot of our attention. More specifically, it is getting specific study groups that address it. I might say that in our post census studies on 1980, on the basis of that, we estimate that we counted about 2 million undocumented aliens.

I think my associate would perhaps like to add a clarifying comment or two.

Senator **Cochran**. Mr. Bounpane?

Mr. **Bounpane**. Yes. Thank you, Senator. You were correct. We don't ask everyone, "Are you here illegally or are you not here illegally," and the counts that are transmitted to the President are total inhabitant counts.

But on the questionnaire that is asked of a sample of the people, there is a question that says, "Is this person a naturalized citizen of the United States?" And there is another question about "When did you come, and in what foreign country were you born?"

If you take that kind of information and summarize it, compare it to records you have elsewhere in terms of people who have come into the country, from immigration records, that is how you arrive at the number that Dr. Keane just mentioned that we think about 2 million people who were not here legally, who were enumerated within the decennial census last time

Senator **Cochran**. To carry the practical side of that one step further, if one State has an unusually large number of illegal aliens in it on the basis of the count of inhabitants that is made, it will be eligible to have a larger number of Representatives in Congress, would it not, than other States?

Mr. **Bounpane**. Yes, that is correct.

Senator **Cochran**. Because the representation in the Congress is based on the number of inhabitants; is that right?

Mr. **Bounpane**. That is correct.

Mr. **Keane**. Right.

Senator **Cochran**. Is this factor a constitutional situation? In other words, if we wanted to change that, if Senator Glenn and I decided to cosponsor legislation to require that the apportionment of Members of Congress be based upon the number of citizens within a State rather than the number of inhabitants, would we have to amend the Constitution, or could we simply enact a change in the statute and get that result?

Mr. **Bounpane**. Neither of us being——

Senator **Cochran**. You don't know the answer?

Mr. **Keane**. I'm not sure whether or not that would require a change in the Constitution or not.

Senator **Cochran**. Do you think we have to amend the Constitution?

Mr. **Keane**. I am not sure. We will find out and follow up with you.[1]

Senator **Cochran**. It is an interesting question. It happened to occur to me as I went through this. The 2 million figure that you gave us as your estimate of the number of illegal aliens you uncovered or discovered or counted in the 1980 census leads me to believe that probably some State has about four Congressmen it wouldn't otherwise have were it not for the counting of those illegal aliens as inhabitants. Is that not right?

Mr. **Bounpane**. That could be the case.

Senator **Cochran**. It could be, if they were all in one State, like California. [Laughter.]

Senator **Glenn**. I want my two back in Ohio. [Laughter.]

Mr. **Bounpane**. Senator, may I say something about that?

Senator **Cochran**. Sure.

Mr. **Bounpane**. Whether it is the Constitution or a law that needs to be changed could be determined. One thing about it, though, we would have a problem with it. I think this goes back to the comment Senator Glenn was just making.

If you had to identify each individual person as to their status here, legally, illegally or some other reason, then our census-taking job might be a little harder, and it would be something to be considered.

You asked the question, how do we get these illegals to participate in the census. That is very difficult. We have to convince them that putting themselves in the census will be safe to them; that we will not turn their names over to the INS; the INS will then not show up the next day and deport them or something like that; that they won't lose their job.

If the census gets too specific in identifying a particular person's status here, I think there is some risk about how people will participate in the census. That would need to be considered in the decision as well as the general policy issue of should or should not those people be included in the apportionment.

Senator **Cochran**. I have one other question, and then I am going to defer to Senator Glenn. I know he needs to be in this conference in the House and Senate on the Armed Services authorization. Let me just ask you this. I know you hire a lot of people. You have to, to do the work necessary to discharge the duties of the census. By its very nature, a lot of these are going to be people who are otherwise out of work. How do you go about recruiting and identifying competent people to do this kind of work upon whom you can rely for compiling accurate information and reliable data?

Mr. **Keane**. I would like my colleague to answer, but I would like to say before he does that you are so right in identifying the challenge. It is somewhat akin to hiring the personnel, the total number of employees in IBM. That is about the same, only you don't do it over the lifetime of a corporation; you do it over 3 months. Not only that, there were a number of the 300,000 positions that we had to fill twice for 1980, so that we had to screen over 1 million to find the required 300,000.

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[1] See p. 91.

So I am very encouraged to see that you have such a grasp of the size of the problem to begin with. To be more specific, Pete?

Mr. BOUNPANE. Just a few words to add to that. You have identified something that is very key to us. Up to about 1970, in general, hiring from the work force you mentioned was not generally difficult. We were able to find people available. Come 1980, the number of people available to be hired by us didn't seem to be as many or of the same caliber.

That is probably because of a change in our society, where many wives are now working rather than being at home in the afternoon and things like that.

So we did experience difficulties finding enough temporary employees out of the universe you mentioned, and we haven't solved that yet. We need some help there, and some suggestions.

A couple of things we are considering is more use of part-time employees. In the past, we have traditionally gone after full-time people. Perhaps that was incorrect, not to look for people otherwise employed who might be able to work on the census.

For example, people who have a job and might want to work on the census and donate their salaries to a charitable organization, or perhaps school teachers, or perhaps even military reservists. These suggestions have all been made to us, and they need some investigation.

Senator COCHRAN. I wonder; you know, in times past, a lot of the hiring has been left up to political patronage groups. I may know more than I understand about this, but my observation is that in the past, when the Republicans have been in power, you pretty much let the county chairman or the State party office work on the census. When the Democarats were in charge in 1980, I guess they did that.

Is that what is going to happen in 1990? Are you going to let the politicians, the political party professionals hire all these people? If so, do you think that this is the best way to go about staffing up for this job?

Mr. KEANE. It is not a prospect now unless the civil service laws change. As I understand it, there is a Government civil service law, and therefore, political referrals are essentially precluded.

Senator COCHRAN. Was this the case in 1980?

Mr. KEANE. It was not or was it?

Mr. BOUNPANE. It was. Senator, a change in the civil service law prior to the 1980 census, precluded us from using the political referral system that had been used in the past. Therefore, we requested an exception to the law to use that system in 1980 and it was granted, and we used it again.

What Dr. Keane was pointing out is that our best judgment today is not to request that change for 1990 because of the difficulties we had with the kind of people that were referred to us and the fact that they may have had more interest in their political background than in working on the census.

Senator **Glenn**. Thank you, Mr. Chairman. We tried to get away from that in the 1980 census. The law was passed prior to 1980, and if I recall correctly, there were some charges of exactly what the chairman is talking about. They were investigated. I don't know what the outcomes of those investigations were, but I think you are pretty well covered under the civil service law now in being able to avoid just the political referrals; is that not correct?

Mr. **Bounpane**. That is correct, Senator.

Mr. **Keane**. Yes.

Senator **Glenn**. I would like to get into, how do you plan to go about these tests? What percent is going to be mailed? What percent will be personal interview? Do you plan personal interviews as well as mail on both these tests and where will they be run? Because different areas of the country have different problems involved? Manhattan in New York has a different problem than El Paso, TX, for instance, as far as running an accurate census. Where are you going to run these things? What percent will be mailed; what personal? Can you give us a little detail?

Mr. **Bounpane**. Yes, I can.

Senator **Glenn**. I guess maybe even start before that. Do you have a special group working on the questionnaires itself, so we simplify that as much as possible?

Mr. **Bounpane**. The 1990 questionnaire?

Senator **Glenn**. Yes.

Mr. **Bounpane**. Yes. There is already a process in place to put together the 1990 questionnaire. If you would like, I could go back to that as well, or would you like to go to that first issue?

Senator **Glenn**. No; just go ahead and comment generally on how you are going to run these tests. I think that is where we turned up a lot of difficulties last time, but one of the difficulties last time, too, some of the problems that turned up in the tests were not translated into changes. It occurred during the census process itself. So we didn't utilize all the things we supposedly learned how to test.

I am interested in how the tests are going to be run and how you are going to do that this time.

Mr. **Bounpane**. I think you are correct about the tests prior to the last census, and we did two things to try to change that. The first thing we did was to move the testing schedule up one full year. Prior to the last census, we began our testing in 1976. This time, we have begun our testing in 1985.

The second thing we did is we moved the tests a full year apart. Some of the tests prior to the 1980 census were only 6 months apart. We found that we could not learn from one before we began a second. This time, by spacing them a full year apart, we have the opportunity to learn from our experience of the first one before a second round of tests occurs. These two changes, we think, will help.

The third thing we did was to try and identify key objectives of each test and make them stick and make the tests solely aimed at those key objectives, even though we do many other things, as well. We perhaps tried to do too much each time in the tests prior to 1980.

How we are going to do those tests now, versus before? In the last census, about 95 percent of the last population was covered by the mail-out-mail-back census; only 5 percent of the population was covered by the direct, door-to-door enumeration, the so-called conventional census approach. The last area, of course, is much different.

Senator GLENN. Did you find substantial differences between the mail and the interview process as far as the results you got?

Mr. BOUNPANE. Generally, we find that coverage, that is, in the number of people counted in the census, is better in the mail-out-mail-back census approach than in the direct, door-to-door approach. That is because of the many checks we have done in the mail-out-mail-back census that don't exist in the traditional door-to-door census.

You are likely to miss a whole housing unit in that traditional method of enumerating a census. Because we give an enumerator a map and a book with a blank page, and we say, "Travel every street in this area outlined on the map. Write down every house, and enumerate every one of those houses."

It is really quite that simple.

Well, it is easy to skip a housing unit in that system, and that tends to happen. Whereas in the mail-out-mail-back system, we develop a mailing list in advance of the census. We do several checks to make sure it is correct. And then we are fairly sure we have a good coverage of every unit. That is used as a control during the census to make sure we get a questionnaire back from every family we should.

Senator GLENN. In your tests, do you do duplicate runs? In other words, do you do a mailing and see what kind of results you get and go in with an interview process to see what kind of results you get from the two systems?

Mr. BOUNPANE. We have never done that in the same place, only in a pair of places, and then you can make a comparison.

Senator GLENN. OK.

Mr. BOUNPANE. There were some more things about the tests. Would you like me to continue with that? I can tell you about where they are. In 1985, we had two tests censuses. One was in Jersey City, NJ. That was an attempt to get a place similar to a New York City-type area. The other was in Tampa, FL.

In 1986, we will be conducting a test census in central Los Angeles County, which is a very varied ethnic area, a lot of non-English speaking people, et cetera, and in eight counties in Mississippi will be the other test site in the spring of 1986.

We do not yet have the sites selected for our 1987 testing cycle, and then we are also planning to do what we call dress rehearsal censuses in 1988—which are shake-downs to make sure we have the process finally in place—and we don't have those sites selected either.

In the early tests, we tried experimental procedures to see whether or not they should be considered further for 1990. As we get closer to 1988, we try to hone in on them.

Senator GLENN. I don't want to cut you short here. I welcome any lengthier testimony you have, and I will be sure to read the record here when we get done, and staff will do the same thing.

There is one area I would like you to comment on, if you could. That is, how you are moving in the area of data processing and that sort of thing? I know the GAO report that came out in 1983 on one of the pages in there it says that, "Based on the Bureau's current schedule approximate processing time for the 1980 census will require about 3½ years and $271 million, dollars" and it goes on with some of the details of that as to how that was going to be done.

Another paragraph later on, "The 88 million questionnaires were checked, edited and accounted for manually. Logging in and editing questionnaires cost $48.8 million; editing required about 37,000 clerks to check each questionnaire for complete and consistent entries," and on and on and on here with quite impressive statistics of the huge workload that is generated with a census.

You have another paragraph later on here entitled "Potential for More Automation." This is commenting on the past 1980 census, of course. It talks about how there could be more; much has been learned since the 1980 census was planned about data processing and microcomputers, related equipment, they talk about here, large scale computers, et cetera, et cetera.

Are you moving in that area so that we use some of this data processing equipment in designing your questionnaires nearly right from the start so you can do that?

Mr. **Bounpane**. Yes, we are, sir. I would say a few words about that and try to be quick so you can leave.

In the first one you mentioned there, that is checking in to make sure that one, someone mails it back; you check it off against this list. That was done manually in 1980, which meant just what you said, someone sat with a stack of questionnaires and a list and manually checked them off.

We have automated the address list. We have put bar codes on the mailing packages so that now when they are returned, they are simply run through a machine, the bar code is read, and they are automatically checked in. That alleviated one of the clerical operations from 1980.

The other one mentioned there—we also agreed with the GAO comment there, as well—that to manually edit this questionnaire, means someone peruses each page and circles a missing item. Eighty-eight million questionnaires were handled that way by hand in 1980. That is obviously a difficult and error-prone task.

To have a machine do that would be very advantageous, as well. We are planning to try and do that. The difficulty is to convert the information that is on a paper questionnaire into computer-readable form very quickly so that the computer can do this for you. We expect about 106 million questionnaires in 1990, and those questionnaires would have to be converted to computer readable form in about 5 to 6 weeks to allow the machine to do the editing that was done manually in 1980.

We think we can achieve that. How we get there is the question that some people are very involved in, and we have still many options to be decided about that, which machinery will be used, what placement of offices will be used to have that accomplished in 1990. But we are aiming for that. We expect to get there.

Senator GLENN. If you go to that additional automation--Mr. Chairman, I am going to have to run to the conference so this will be my last question. But if you want to move in that direction, is it going to cost us a bundle to set up to do this with computer technology? Or can you rent the computers for this? Do you have a price tag that we are going to get faced with one of these days to do it that way?

Mr. BOUNPANE. We don't have a precise price tag on that. Yes, there will be some upfront costs to change to this system over the system used in 1980. But we feel we can still do that under the overall guideline that Dr. Keane set out, which is to conduct the 1990 census at no more than the per unit cost that the 1980 census was conducted.

Senator GLENN. Again, you are going to stay within budget as you see it right now, the same budget we had in 1980.

Mr. BOUNPANE. Adjusted for inflation, yes.

Senator GLENN. And still be able to shift over to more automation?

Mr. BOUNPANE. We think we can do that, yes.

Senator GLENN. We ought to put you in charge of several programs. [Laughter.]

Mr. KEANE. That is the same budget per enumerated rated unit. In other words, we had 88 million units to enumerate in 1980 and approximately 105 to 106 million in 1990.

Senator GLENN. So instead of 226, if we came up with 250 million, there would be an additional cost of processing. You are saying the per unit cost per person would remain the same?

Mr. BOUNPANE. Per housing unit, Senator.

Senator GLENN. Per housing unit?

Mr. BOUNPANE. Per housing unit.

Senator GLENN. Per housing unit.

Thank you, Mr. Chairman. I would like to repeat, Mr. Chairman, this is something that is going to get a lot more attention as we go along here. You will have a lot more problems. We want to work with you. We don't want to see this come down. In some respects, last time, this came down to where we were coming to the 1980 census and we were having a whole series of hearings, as I recall, trying to resolve how this thing was going to occur. There were a lot of loose ends hanging out when we were getting not very far away from sending people out into the field and mailing out the questionnaires. I hope this time we have this all ironed out.

As you say, you are starting a year sooner. That is good. I congratulate you for that. I just pledge you our support here for trying to help you work out whatever problems there are down the road. Thank you, and I am sorry I can't stay for the entire hearing.

Mr. KEANE. Thank you.

Mr. BOUNPANE. Thank you.

Senator COCHRAN. Let me followup on Senator Glenn's question about automation. We know that you are going to have to obtain terminals and all kinds of other hardware in order to conduct the more sophisticated and accurate census in 1990. This is going into some expense and probably considerable expense. What do you do with the hardware after you finish taking the census in 1990? You won't have to use it again until 10 years later. What are you going to do with the hardware?

Mr. BOUNPANE. We don't quite know the answer to that, yet, Senator. It is a very good question. In coming to grips with what system we will actually use, we have to answer that question before making a decision of what to do.

There really are three alternatives open to us, or some combination of them.

One of these is direct data entry; simply have someone sit at a key station and key the information on a questionnaire. That would require a huge number of key stations and people. But that is the kind of thing that perhaps could be leased or borrowed.

Another approach is to use what we used in 1980, that is, to film the questionnaires and then use the machines we have developed that directly convert the microfilm into computer-readable form. That will not require nearly as much hardware. We can probably build or purchase most of those and use them for other census operations.

Yet a third alternative that may be open to us is to use optical mark reading technology, the kind of thing that is used on standardized testing. That skips the filming stage. The page goes directly into the computer by going through a reader.

We have tried that, and there are some things to work out there. That would require a large number of machines, and so perhaps we have to talk about leasing those or sharing them with another Government agency or something like that. I think you put your finger on something that is very important that we have yet to solve.

Mr. KEANE. Might I add an observation, Senator?

Senator COCHRAN. Please, Dr. Keane.

Mr. KEANE. Congress did pass a law authorizing us to do a mid-decade census. That would be a 10-year version, only in years ending in 5 instead of 0, and did appropriate funds, and we did do work in 1979 and in 1980. Were Congress to fund that activity in the future and, of course, the next one would be for 1995, that would certainly require a lot of the hardware we are talking about, and perhaps could go a long way toward justifying the purchase of additional equipment.

Senator COCHRAN. I hope you have a better experience than the Internal Revenue Service had. They bought a computer that devoured tax returns, apparently, rather than counting them or reading them. We don't want to do it with our people. We don't have that many.

Mr. BOUNPANE. We hope we don't have that problem, as well.

Senator COCHRAN. I know in connection with this automation, you are going to be using some of this technology in the pretesting so that you will have a dry run so to speak. I think that in the one you are doing in Mississippi in the eight counties there, you will be using some of this technology. Can you tell us a little bit more about the technology that you are going to be experimenting with there and how many people you are going to be employing, a little more of the details of that?

Mr. KEANE. We intend to employ around 500 people and spend about $1.4 million. For the specific detail beyond that, my colleague.

Mr. BOUNPANE. In Mississippi, we are going to try what we call a self-contained office. That means that all of the census operations, that is, the collection of the information from the respondents and the processing of the data will all take place in one office. So it will be a string of microcomputers put together in the office and key stations to enter the data into these computers.

We are considering using that arrangement in places where the census office covers a relatively large land area. The reason that self-contained process makes sense in an office that covers a large land area is that you want to minimize the amount of traveling that has to be done with people, with paper, et cetera, so that if you could do the whole task in one centralized location there, it would be very advantageous. That is what will be tried there.

Just as background, in the 1985 test, we tried the optical marker reader in Tampa, FL, and we tried direct data entry in Jersey City.

Senator COCHRAN. You are also going to be doing some pretesting in Los Angeles, as I understand it. Will that be a different kind of technology that you will be employing there? Would it be similar in any way to the work you will be doing in Mississippi?

Mr. BOUNPANE. It is going to be different, Senator. In Los Angeles, we are going to try the film-to-tape approach that was used in 1980, the difference being the cameras and the so-called FOSDIC machine that actually converts the film to computer-readable film will be located in Los Angeles. So it is decentralized film to tape, which parallels what we did in 1980 but on a centralized basis.

Senator COCHRAN. What are you going to be filming?

Mr. BOUNPANE. We will film the actual questionnaire itself. There are cameras that actually sweep this page.

Senator COCHRAN. You are not going out and taking a picture of the countryside or anything. [Laughter.]

Mr. BOUNPANE. Right.

Senator COCHRAN. You will be doing this with people who will be going door-to-door? How are you physically going to be putting this together?

Mr. BOUNPANE. The census in Los Angeles will be mail-out-mail-back, and those that are returned go to a specific office which is solely set up to do this microfilming operation and to develop the film right there and then convert the film into computer readable form.

Senator COCHRAN. Some people have suggested that maybe what we ought to do is to get to a system of sampling. Polling has become so sophisticated now that you don't have to count everybody to know how many there are. You don't have to ask everybody how they are going to vote. You can find out by just asking a few, if you select them in a careful way, a scientific way.

What is your reaction to that suggestion? You may be overdoing it, in other words, in the way you are going about it.

Mr. KEANE. We have to, by law, do it the way we are doing it; that is count everybody, and then sample.

Senator COCHRAN. What law tells you that you have to do it that way?

Mr. BOUNPANE. Title XIII, which is our enabling legislation, says that we have the right to do sampling except for the purpose of determining the count for use of reapportioning the House.

Senator **Cochran**. The point is, you can count everybody that way, but then can't you sample and find out the answer to all these other questions?

Mr. **Bounpane**. Yes, Senator, that can be done. Actually, that is what we do.

Once you have to make the effort to get to the household, there is some advantage in collecting other information, as well. The marginal costs of the increased information is small. That is why, for everybody, we ask just the basic seven questions. That is not much different than determining that there is a person there, whereas all the additional information was only collected from samples of people which, in 1980, was one in six of the population.

Mr. **Keane**. And there are 39,000 governmental units dependent upon census data, so that if we were to go to only a sampling kind of a mode, we would probably have so thin a sample that the data reliability and accuracy would be subject to real questioning.

Senator **Cochran**. There has been some suggestion that because of educational deficiencies that there are a lot of people who didn't get counted and who don't get included in the census. This was particularly directed in areas where you have high concentrations of low-income persons who may not have access to the information about how you respond to the census, or it may come to the address and nobody can read there, or maybe they inaccurately fill out the information and send it back, and this distorts that actual number of persons who are in the household or who are in the neighborhood, even.

I know my State, which is a very poor State, it has been suggested to me by mayors and country officials that they thought that they had large numbers of persons who just weren't included in the 1980 census. This particularly was true when it came time to look at the numbers who were considered to be in poverty. Because of that basis, grant funds were allocated to the State or title I education funds were allocated, and I know it was our experience that we ended upon with a lot less money out of some of the Federal programs than we had had in the past because the census people said we didn't have as many poor people as we used to.

We were glad to hear that, but we weren't sure whether to believe it or not.

The reason for my question is, a lot of people think that the census didn't count a lot of poor people the last time; that they didn't count a lot of minorities. Are you going to be finding out, through the efforts you are making in Los Angeles and Mississippi and in Jersey City and wherever else you are making these dry runs, doing the pretesting, whether or not you are getting an accurate count of underprivileged persons or maybe people who can't read or poor people?

Mr. **Keane**. I would like to make a general statement about that and then ask my colleague to continue.

If you look at the thing overall, that is, the 1980 census overall—and we can't say precisely just how accurate it was—just generally speaking, within 1 percent of the count, and you then compare that with other countries, other countries seem to be quite satisfied in the 2 to 4 percent range and look at our country with some envy and often consult with us on how to do a better job there.

You have correctly identified the problem, that is, when you look at certain sectors, be they ethnic groups, be they geographic areas, be they age groups, be they income groups and others. So that the concerns of the people who have the focus of those certain sectors are very real and sometimes they criticize us about that alleged undercount because of what it means.

So that problem has our focus, and a number of aspects of that are part of a number of the test censuses focused at ways to improve the "differential" undercount.

Senator COCHRAN. I know that in one of the areas, you are going to eight counties in Mississippi as an example. I think in Meridian is one town where I was told that we had some bad numbers as a result of the 1980 census.

Now, I don't know whether it was inaccurate or whether it was accurate, but that was the perception, anyway, by local officials, that everybody didn't get counted. I guess we will find out maybe a little bit more after the pretesting, but we do want to be sure, and I know you share this view, that we do count everybody, and that whether you are poor or not or whether you are a minority or not, you ought to be counted in the census.

Let me ask you this. Is there a need for an education program or some kind of program that may advertise the fact that the census is going to be taken and that this is what it is and this is why it is important and you ought to participate in it and cooperate with the census takers, maybe giving some helpful hints on if you have questions and you don't know the answers to them, somebody you can go to, a referral service or an information place in the community to satisfy yourself that you are doing this right? Is there any need for maybe that kind of program to be undertaken?

Mr. KEANE. Yes, there is, and we have had programs in the past, but we will do a larger job, a better job, and an earlier job in connection with 1990.

For instance, there is a volunteer group called the Advertising Council which does work. You have probably seen Smokey the Bear ads, for instance, and so forth.

The Government agency, in our case, would pay for the production costs, but the ad council volunteers the creative effort and the space and the time. We signed on with them just about a year before the 1980 census. We have already approved—and they have approved—to do work with us beginning January 1, next year.

But it needs to extend beyond that. It is hard to imagine how we could possibly overvalue favorable awareness of the Census Bureau and especially our No. 1 activity, the decennial census. In that regard, any public service announcement that you might want to do in connection with our east-central Mississippi test census next year or anything that you might even spread among your colleagues in Congress about the importance and the confidentiality and the usefulness of a good census would be most appreciated by us, and by extension by the country.

Senator COCHRAN. I think that is something that we all have a responsibility to improve, and that is, the willingness on the part of the public to participate, to cooperate and to help make the census a success. I think Members of Congress are peculiarly situated to participate in a constructive way to help in that regard.

So I think that is a good suggestion, and maybe we ought to talk about it further and get into some specifics and work on the details of how we do a more effective job of communicating with the general public on this subject. Because it is extremely important. I know school districts; my parents are both former schoolteachers. They are retired now, so I am very sensitive to the amount of money that was allocated to the schools. We had school districts that think that they got shortchanged as a result of inaccurate counting of those who would otherwise have been counted for the purpose of figuring the poverty numbers in the schools to qualify for funding under title I of the elementary and secondary education.

There are other programs, of course, that we are familiar with that are also important.

I think we have hit the high points, and we have touched on some important areas today that need the attention of the Congress. We haven't identified any subject that needs to be the subject of any legislation at this point, I don't think.

We do want to continue to work with you and maintain a line of communication, though, to be sure that questions that do arise are addressed and that we have a successful and an accurate census in 1990.

We may have some additional questions which we would want to submit to you in writing. We can ask questions for the heck of it or to fill out a hearing record. That is not what we are here for, but we may submit to you some questions that I may not have asked that I should have. Some may occur to other Senators on the subcommittee who weren't able to be here. We hope that you will be able to respond to those in a timely way. They will be included in the record of the hearing.

Thank you for your cooperation with the subcommittee.

[Mr. Keane's prepared statement and responses to written questions follow:]

STATEMENT OF THE DIRECTOR OF THE BUREAU OF THE CENSUS
John G. Keane
Before the Subcommittee on Energy, Nuclear Proliferation,
and Government Processes
Committee on Governmental Affairs
U.S. Senate
July 17, 1985

Mr. Chairman, I appreciate this opportunity to present an overview of Census Bureau plans for the 1990 census. My statement covers four topics: the 1980 census experience; the 1990 planning process; our goals for the 1990 census; and what we are planning to do to correct 1980 problems and meet 1990 goals.

1980 Census Experience

I will begin by listing some of the accomplishments that made the 1980 census a success:

First, estimates show improvement in coverage over the 1970 census.

Second, we delivered the counts for reapportionment and redistricting by the legally mandated deadlines.

Third, the public information and outreach programs were highly successful, helping us achieve an 83-percent mail return rate and good coverage.

Fourth, we produced more data, particularly for small areas.

This is not to say there were no problems with the 1980 census and I would like to share some of those with you.

First, there were delays in the release of some of the census data products, particularly those containing data from the sample or long-form questionnaire.

Second, maps and other geographic materials were produced in separate clerical operations, leading to delays and inaccuracies that we had to correct before releasing the data products.

Third, many of the temporary census offices experienced problems in hiring and retaining workers.

Fourth, there were concerns about the accuracy of the 1980 census which led to several legal challenges. In some cases, these challenges forced temporary census offices to remain open longer than planned.

Taking a census is an exciting and tremendous challenge. Enumerating and collecting detailed characteristics for over 226 million people and 88 million housing units, as we did in 1980, were not simple tasks. This is particularly true given the highly mobile nature of the American people and the diverse conditions and situations in which we live. Our task will be more difficult in 1990, when we estimate that there will be about 24 million more people and about 18 million more housing units.

Adding to the challenge is the fact that the Census Bureau must count not only the majority of us who live in houses, apartments, condominiums, trailers, and so on, but also those who live in group quarters -- such as military barracks, college dormitories, penal institutions, long-term hospitals, and migrant farm camps -- and even those without any home.

We have directed our planning efforts over the past several years at recognizing the problems in the last census, identifying their causes, and taking steps to prevent those difficulties so that we can conduct a still better census in 1990.

1990 Planning Process

Mr. Chairman, I now will describe our process for planning the 1990 census. Basically, this process involved gathering information through internal review and consultation with data users, selecting ideas that require testing, and conducting test censuses. By the fall of 1986, based on our test experiences we must make several key decisions related to automating the census and to the basic methodology to be used in the census. By 1988, when we conduct our dress rehearsal census, plans for 1990 must be essentially complete.

To gather the information we need to make improvements for 1990, we began with our own internal review of the 1980 experience. Even before the 1980 census concluded, we established working groups to look at various aspects of the 1980 census and to suggest possible changes for 1990. The results of this effort were to focus our attention on priority issues.

We also have been, and plan to continue, consulting with a broad range of data users to get their advice on our 1990 census plans. These include other Federal agencies, state and local officials, planners and academics, business and private organizations, minorities, and other interested data users.

Of course, the Congress is the source of our legislative authority to take the census and a prime data user. We, therefore, welcome this opportunity to review our plans with you at this early date and we look forward to future opportunities.

Through review and consultation, we have, thus far, identified several key issues that we will need to address in our test censuses. Among these issues are: automation, geography, accuracy of the counts, the need for more cooperation with local jurisdictions, promotion, and staffing.

The test censuses are laboratories for actually trying out, under census-like conditions, different options and approaches that have surfaced in our internal review and consultation with data users.

Last year we conducted a test of procedures for compiling our address lists. We are conducting test censuses this year of census procedures and automation in Jersey City, New Jersey, and Tampa, Florida, and will conduct further tests of procedures and automation next year in 20 communities in central Los Angeles County, California, and in 8 counties in east central Mississippi. We also will conduct a national test of questionnaire content items next year.

We will hold additional test censuses in 1987 and will conduct a full dress rehearsal for the 1990 census in 1988. Our intention is to make the dress rehearsal a true dry run of census procedures for 1990. We do not want to make many changes after the dress rehearsal, only fine-tune the census process based on dress rehearsal results.

1990 Census Goals

We will obtain the information we need to make correct decisions for the 1990 census from three sources: internal review, consultation with data users, and the test censuses. In many instances, though, we may find that there is not one right answer or one perfect solution. That is because several approaches may have merit. To help us make these choices, we have established several criteria, which are our goals for the 1990 census.

First, we must meet our constitutional and legal mandates to deliver apportionment counts to the President by December 31, 1990, and the counts for redistricting to the states by April 1, 1991. Any changes in the census process for 1990 must enhance the Census Bureau's ability to meet these deadlines.

Second, we want to produce all data products from the 1990 census in a more timely manner than ever before.

Third, we want to keep the total cost of the census reasonable. The aim for 1990 is to keep the per-unit cost (adjusted for inflation) no higher than it was for 1980.

Fourth, we want to maintain the high level of accuracy of past censuses, particularly in the area of coverage. This a real challenge: we want to make the census faster and keep costs reasonable, but we also must maintain the accuracy of the census data.

Fifth, in deciding what questions we will ask, we must strike a proper balance between the need for information and the time it takes respondents to complete the questionnaire. There will be more and more legitimate demands for data but we must keep the length of the questionnaire reasonable while meeting basic data needs.

Sixth, we must maintain the strictest confidentiality of each respondent's answers. Though I mention this criterion last, it is one of the major considerations for 1990. The success of the census depends directly upon the willingness of the public to cooperate, and their trust in our pledge of confidentiality is one basis for that willingness.

Now, Mr. Chairman, I would like to outline what we are doing to solve the problems of the 1980 census and to meet our goals for 1990.

Automation

Let's look first at the area of automation. Automating many of the census tasks performed clerically during the 1980 census and beginning automated processing earlier than in 1980 will help us meet our legal mandates and release all other data products in a more timely manner. Increasing automation in the census also can improve the accuracy of the data, lead to greater cost-efficiencies, and give us more control over the entire census process.

Traditionally, most of the activities associated with collecting and processing the census questionnaire (e.g., checking incoming questionnaires against an address control list, editing of questionnaires for completeness, and coding of handwritten responses) have been paper- and people-intensive tasks. The use of automated equipment can help us deal with the mountains of paper and the thousands of clerical tasks in a much more efficient and controlled way.

We have identified a number of areas that are candidates for automation, and have started testing some of them. I will discuss only three of these areas in detail today: the geographic support system, the address control file, and the early conversion of questionnaire data into computer-readable form.

First, let us look at geography. Geographic materials are essential to a successful census for two reasons: First, having correct and legible maps helps our enumerators find every housing unit so that we have a complete count; and second, having correct boundaries and geographic information helps us assign each housing unit and the people who live there to the appropriate land area. I mentioned earlier that one of our problems in the 1980 census was that our geographic materials, including the maps, were produced in separate operations involving a great deal of clerical work. For 1990 we are automating our geographic support system, which we are calling TIGER (Topologically Integrated Geographic Encoding and Referencing system). TIGER will integrate into one file all the geographic information that was produced in separate operations in 1980. This will allow us to produce the geographic products and services for 1990 from one consistent data base, and will help us avoid some of the 1980 census delays and inaccuracies. Having the computer generate maps that match the geographic areas in our tabulations will be a big improvement over the clerical operations of the 1980 and earlier censuses.

Another improvement planned for the 1990 census is the development of an automated address control file. In 1980, although the initial control list of addresses was computerized, changes to the address file during the census were made manually. For 1990, we will have continuous access to the automated address control file so that we can keep the list current. We have already implemented an automated address control file successfully in our 1985 test censuses, and will conduct further testing.

With an automated address file, it will be much easier to determine whether or not we included a specific address in the file. It will be possible to update the file where we missed an address in earlier operations.

We can use bar-code technology for computer check-in of the questionnaires. As a result, it will be easier for our enumeration staff to identify the addresses for which questionnaires have not been returned, and we could send reminder notices to those addresses, thus reducing further the number of nonresponding housing units where we need to send enumerators. Finally, with an automated address list, we can update the list and use it in future Census Bureau operations.

One of the most promising ways to take advantage of automation in the census, and our biggest challenge, is to convert the data on the questionnaires into a computer-readable format earlier in the census process than in past censuses. This approach is essential if we are going to take full advantage of automation and release data products quicker. For 1980, the data conversion did not begin until after the temporary census offices closed and shipped their questionnaires to one of three automated processing centers. For the 1990 census, we want to begin converting data simultaneously with the collection phase. This early start (5-7 months ahead of the 1980 schedule) will allow more time for review and correction and will enable the computer to assist in certain census operations. It will contribute to tighter control of field followup assignments and allow early identification of enumeration problems. Also, computer records of questionnaires could serve as backups to the original questionnaires in case they are accidently destroyed.

Although there is agreement that we should implement earlier automated processing for the 1990 census, there are two major questions we still must answer. Where will the automated processing be conducted, and what technology will be used to convert the questionnaire data into computer readable form?

With regard to the first question, it is helpful to consider two broad scenarios for accomplishing this early data conversion. Under one scenario, there would be combined district and processing offices, which would carry out both automated processing activities and field followup. It is very unlikely we would use "combined" offices for the entire country because of difficulties building, installing, integrating, and monitoring 500 separate data processing systems. We will be testing a "combined" office in our 1986 test census in Mississippi.

Under the other scenario, we would have separate processing and district offices. Here, the processing offices would receive the mail-returned questionnaires from the public, check them in automatically, convert the data to machine-readable format, and perform automated editing of the questionnaires. The district offices would be responsible only for contacting households to follow up missing or incomplete questionnaires. We tested this plan in our 1985 test censuses, with collection offices in Jersey City, New Jersey, and Tampa, Florida, and processing in our permanent processing office in Jeffersonville, Indiana. In our 1986 test census in Los Angeles County, we will use separate district and processing offices where the processing office is within the same metropolitan area as the district office. It is unlikely we would use "separate" offices for the entire country because of the communications and logistics problems that arise when the processing office is a large distance away from the district office.

Having combined processing/district offices in parts of the country with low population density and separate processing and district offices in other parts is the most likely option for the 1990 census.

In addition to deciding where to convert the data to computer-readable format for 1990, we must also determine how to do so. In 1980, after we completed collection activities we entered the data from the questionnaires onto computer tapes by microfilming the questionnaires (after clerically coding write-in responses), and then reading the microfilm with an optical scanning device (FOSDIC--film optical sensing device for input to computer). The choices for 1990 are basically among three technologies or various combinations thereof. We can continue to use the film-to-tape process like 1980, but with newer and better equipment. We can try to eliminate the microfilming step and read the questionnaires directly as college aptitude tests are processed using optical mark recognition technology. Or we can enter the data by keying. Keying for all data conversion in all processing locations is unlikely, but we will need to use it extensively for entering into the computer address information and the written answers on the questionnaires. In our 1985 test censuses, we used the optical mark reader and keying approaches. Although there were some problems, the optical mark reader worked well enough for us to consider the possibility of testing it further in 1986, along with keying and the film-to-tape method.

The issue of data conversion methodologies is related to, but not dependent on, the office structures discussed above. A decision on equipment also involves many other considerations such as the content and appearance of the questionnaires and the ease with which people can complete them; the reliability and availability of the equipment; the staffing requirements imposed by the equipment both in terms of numbers of people needed and the technical sophistication those people must have; and the cost and maintainability of the equipment.

We must make decisions on these two major questions (where and how) related to data conversion by September 1986, so that we can begin the process of procuring equipment. Some have suggested that we should make these decisions earlier, but we beleive it is important to learn as much as possible from our test census experiences before making such major decisions.

Some of the other areas we are investigating as automation possibilities are: computerized editing of the questionnaire for completeness and consistency, automated coding of write-in answers, improved tabulation and publication systems, and more automated (and, therefore, more timely and accurate) management reports, such as cost and progress reports.

Census Procedures

Now I would like to turn to the subject of the procedures we use to take the census. We must choose procedures for 1990 that will help us meet our goals, particularly those related to accuracy, cost, and timing.

As in 1980, we plan to use the basic mail-out/mail-back method for most of the country in 1990. We will mail questionnaires to every household on our mailing list, after taking great effort to assure that the list is as complete as possible. We will ask householders to fill out their questionnaires and mail them back. We will contact only those housing units for which a questionnaire is not returned or for which additional information is needed. In sparsely populated areas of the country where mail procedures are not appropriate, we will visit every housing unit. In all areas, we will devise procedures for enumerating special places (such as college dormitories) and we will implement quality checks and coverage-improvement procedures to make the census as accurate as possible.

For the 1990 census, we are investigating possible modifications or refinements to the procedures used in the 1980 census. For example, in Jersey City we tested a two-stage census approach. Under this approach, we collected basic information first and 2 months later collected the additional information from a sample of persons. In 1980, we collected both types of information at one time. Some believed that the two-stage approach might improve the census in hard-to-enumerate urban areas. However, the speculated advantages for the two-stage approach did not materialize and the mail-return rate for the second stage was so low that we discontinued followup for this stage. In the test census in Tampa we tested mail reminder cards. We wanted to see whether we could improve mail-return rates and reduce costly personal visits by sending reminder cards a few days after questionnaire mailout to households that had not yet returned their questionnaires. This test indicated that reminder cards can be cost effective and we will use them again in our 1986 tests.

We will continue to refine census procedures in our 1986 tests. In Jersey City and Los Angeles County we are examining ways to minimize problems caused by mail-delivery in multi-unit apartment buildings where apartments sometimes are not well defined. In Mississippi we will work on problems related to getting questionnaires to the correct households in rural-route delivery areas. One option we will test in Mississippi is having census enumerators, rather than the Postal Service, deliver the questionnaires. We also will examine some of our enumeration procedures for American Indian reservations on the Choctaw Reservation in Mississippi.

Special coverage-improvement procedures are an important part of taking a good census. In 1980, these included several operations to improve our address list, a recheck of "vacant" units to see if they were occupied, list-matching, a "were you counted" campaign, and so on. For 1990, we will evaluate the 1980 census coverage improvement procedures to see which should be repeated, and we will test refinements in these procedures. One coverage-improvement procedure I will discuss further today is the Local Review Program.

In 1980, for the first time, we gave local officials in over 39,000 jurisdictions an opportunity to review census counts before the temporary census offices closed. Local officials noted any discrepancies between these counts and their own data and we checked the counts and made corrections, as necessary. For 1990, we want to improve this program. We are working on a design that will give local officials an opportunity to review address counts before Census Day and actual census field counts before the offices close. They would have more time to prepare their data and review our counts. We expect to begin contacting local officials earlier than in 1980 and we are considering holding training sessions, in cooperation with state agencies, to help the localities get ready for the program.

In addition to improving census procedures in order to make the census more accurate, we will continue to examine different undercount measurement and adjustment techniques to determine whether we can develop a valid procedure for adjusting the census counts. Methods of making adjustments to the counts must not only be statistically sound, they must be legally and politically acceptable. They also must be practical to implement in time to meet our legal deadlines. The 1986 census in Los Angeles

County will test the feasibility of quickly measuring coverage so that we could adjust data, if necessary, in a timely manner.

As a final note on census procedures, I want to add that while designing a workable census system is important, we must also have a good work force to get the job done. In some areas in 1980, we had problems hiring and retaining enough good census workers. This was due in part to our pay rates (which may not have been competitive in all areas), the temporary nature of the jobs, and the fact that census work, particularly the personal visits to nonresponding households, can be very difficult.

We are giving special attention to finding new ways to recruit, hire, and retain our temporary census work force for 1990. In future test censuses, we will examine different methods of paying our enumerators, such as hourly rates, piece rates, performance bonuses, and cost reimbursement. Still, we must provide additional types of non-monetary motivation. Along these lines, we will investigate job enrichment efforts that would allow temporary workers to see and participate in more tasks. We also will consider new strategies to recruit more motivated and skilled people by seeking active support from community, nonprofit, civic, and volunteer groups.

Questionnaire Content

Now, I would like to make a few comments about the census questionnaire. Since the purpose of the census is to meet data needs for at least a decade, a major part of census planning is selecting the census questionnaire content.

As we consult with data users, we are hearing many more requests for data than we can reasonably satisfy. Most of these requests reflect legitimate needs for a wide variety of data to describe our complex society. But one of our goals for the 1990 census is to balance the needs for information against the length of the questionnaires. This balance is necessary because public cooperation is essential for a successful census. Such cooperation could be undermined by questionnaires that the public finds too lengthy. In practical terms, this means that there can be no significant growth in the size of the questionnaires for the 1990 census.

In making the final choices about which subjects to include in the questionnaires we will follow six standards:

> First, we will collect only required data--those needed for constitutional or legislative reasons, those needed specifically to administer Federal, state, and local programs, and those needed to describe the most important aspects of the American population and housing stock.
>
> Second, the census must meet small-area data needs. If the data are needed for small geographic areas (for example, census tracts with an average population size of 4,000), then the census is an appropriate tool. If the data are required only for larger areas (such as the Nation, regions, states, and large metropolitan statistical areas), sample surveys might be more appropriate.
>
> Third, we will consider the need to collect data for small and dispersed population groups. The census is more appropriate for this purpose than a nationwide sample survey where there is not adequate coverage of these groups to yield any statistically significant data about them.

Fourth, the questions must lend themselves to self-response and not impose unrealistic requirements for data processing. The questions generally will be answered directly by respondents without an enumerator present. So, the questions must be easy to understand and the terminology widely accepted by the public. In addition, the responses must be translatable, with reasonable efforts, to machine-readable form.

Fifth, we will not consider any question that we believe is intrusive, offensive, or widely controversial. The Census Bureau needs public cooperation for the census to work. It cannot risk losing that cooperation through improper questions.

Sixth, many of the subject areas to be asked in 1990 will have been asked in 1980 and earlier censuses. Answers in 1990 to questions asked previously can provide trend data needed to analyze vital socioeconomic and housing characteristics. This criterion does not mean that just because we asked a question in the last census, it will be asked again or that we will not ask new questions. We will consider, however, the need to provide continuity and comparability between data gathered during each census.

This fall, we will complete our series of local public meetings where data users from across the country are advising us on questionnaire data items, data products, and census geographic areas. We are holding at least one meeting in each state. We also are now completing meetings with the Federal agencies to determine which data they need to administer Federal programs.

We must make the many decisions about census content in the next 2-3 years. Indeed, we are now planning our National Content Test for 1986, our main vehicle for testing new questions and question wordings. By law, we are obligated to report to the Congress on the subject areas for the census by April 1, 1987, and on the actual questions that we will ask by April 1, 1988.

Closing

Mr. Chairman, let me summarize what I have discussed here today. I have reviewed some of the successes and problems we experienced in the 1980 census. I have described our process of consulting with data users and of conducting test censuses for the 1990 census. And I shared with you our goals for the 1990 census. Then I briefly described the steps we are taking in the areas of automation, census procedures, and questionnaire content to meet our goals for the 1990 census.

In closing, I want to mention that the 1990 census will be the Bicentennial Census of the United States. For 200 years the census has chronicled the growth of our Nation from a backward young republic of 4 million people in 1790 to a world power of 226 million people in 1980. Professor William Kruskal, a noted statistician and former Dean of the Division of the Social Sciences at the University of Chicago, has called the census a national ceremony and "a constructive, benign activity that helps us understand our National self and act more wisely on the basis of solid information."

I have reviewed today some of the issues we face in planning the 1990 census. Our goal is to develop a census that will help us to understand our national self and give us reliable information to make wise decisions. Mr. Chairman, I look forward to working with this committee in its review of census plans. I think that working together, we can make the 1990 census the best ever. Thank you.

8/1/85

QUESTION 1: In your listing of the goals for 1990, you state that the Census Bureau aims to keep the per-unit cost of the census (adjusted for inflation) no higher than it was in 1980. Why can't you reduce this cost?

ANSWER: The cost could be reduced, but only at the risk of reducing the quality and usefulness of data from the census. We did not set the goal for 1990 at the same per unit cost as 1980 lightly, in fact, we consider it a serious challenge to meet that goal. There are many reasons for that. There is some evidence to indicate that taking the census in 1990 will be more difficult than in the past, and that may call for extra resources. In addition, we plan to make many improvements in the census such as an expanded redistricting program and earlier availability of data products, and there are resource implications for that. In addition, implementing automation (a goal everyone agrees is worthwhile) requires a large up-front investment. In effect, to take the census in the anticipated environment and to make the planned improvements in accuracy and timeliness means we will actually be more cost efficient in the 1990 census by conducting it at the same per unit cost as the 1980 census.

We should also add that the cost estimate for the 1990 census is based upon several assumptions whose validity will not be known for several years and that have a major effect on the total cost of the census. Some uncertainties can be reduced as we test, evaluate, and make decisions. Other uncertainties will remain with us until Census Day, 1990. For example: What will be the mail return rate? How many housing units will there be? How efficient will our workforce be? How long will it take to find and count everyone and every housing unit? These uncertainties make it very difficult to commit up front to a goal of reduced per unit cost.

8/1/85

QUESTION 2: The Constitution requires that the U.S. population be enumerated once every 10 years for the purpose of apportioning congressional representation among the states. For this purpose, what questions *must* be asked of the Nation's inhabitants?

ANSWER: We must ask enough questions to determine that a person exists and to differentiate that person from another person. It is difficult to say precisely which questions are required to do that, but at the very least, they would include name, age, and sex, in addition to address. The other questions we ask on the short form -- relationship, marital status, race, and Spanish origin -- are also useful in identifying persons in the household and in helping us control the enumeration to make sure we have counted everyone.

QUESTION 3: What changes do you anticipate in the topics covered or questions to be asked on the 1990 short form?

ANSWER: We anticipate at this time that the population topics and questions will be substantially the same as in 1980, except that we are examining re-wording of the question on race and Spanish origin. We are considering moving housing topics such as the availability of plumbing facilities from the short-form to the long-form questionnaire. These are still only preliminary plans; there have been no final decisions as yet.

8/1/85

QUESTION 4: GAO has advocated the use of a two-stage census. I know that the Census Bureau tested its concept of a two-stage census during its test census in Jersey City, New Jersey. However, GAO has advised the Subcommittee that its specific recommendation was not tested because the short form used in this test census was not a truly short form requesting only minimal data necessary for apportionment. Wouldn't such a form encourage a quick and complete mail-back response? Why wasn't it tested?

ANSWER: Basically a "short" short form was not tested in Jersey City because we did not feel that such a form would be viable in 1990. We feel that all of the seven population questions are necessary on a 100-percent basis. Perhaps some of the housing questions could have been left off, but it was so early in the testing cycle, we did not have adequate information to make appropriate changes to the housing questions.

We do not believe that reducing the short form from 7 to 3 or 4 population questions (see question 2) would have dramatically increased the mail return rate. The size of the form would not have been much smaller because we would still need to provide for answers from up to 7 persons and we would still have to design the form for automatic (machine-readable) processing. We also do not believe that separating the 100-percent housing questions from the 100-percent population questions would make much difference. The housing questions are only asked once--not for each person. Once we spend the initial cost to get to a household, the incremental cost of asking a few more questions is marginal. Conversely, having to go back to every household a second time to collect housing data would be extremely costly.

8/1/85

QUESTION 5:	What are your reactions to the use of a greatly simplified short questionnaire, perhaps a postcard, which includes only the minimum questions to enumerate the population for apportionment?
ANSWER:	If the mission of the census were merely to collect basic data for apportionment purposes, then a greatly simplified census form might be feasible, although there is some doubt about how many questions are needed to simply count a person (see question 2). But since the modern census must meet all of the Nation's important data requirements, we believe it is more cost-effective to collect as much data as possible the first time we contact a household. Once we spend the initial money to get to a household, the incremental cost of asking a few additional questions is marginal. We are also concerned that mail return rates and data quality would suffer in a second stage of the census, because respondents would not want to cooperate a second time. The Jersey City test bore this out. In Jersey City, we used a split panel approach. In one panel, we mailed out the short- and long-forms at the same time, as in 1980. In this panel, the mail return rate for persons who received the long form was about 31 percent. In the other panel, we mailed long forms in a second stage about 2 months after short forms were mailed. Here the mail return rate was very low--about 15 percent.

8/1/85

QUESTION 6: Why don't you test the postcard concept in one of your test censuses?

ANSWER: Because of limited funds and test opportunities, we must choose judiciously among the many ideas that surface as potential test objectives. We chose not to use the "postcard" concept as the short form in our two-stage census test because we do not believe it is feasible for 1990 (see questions 4 and 5). Furthermore, there are other questions that need to be considered. Could a "postcard" be automatically processed? Would it be so small that it would be lost or ignored?

8/1/85

QUESTION 7: What were the goals and objectives for the Jersey City test census?

ANSWER: Our Jersey City test census focused on testing a two-stage census approach and comparing it to a 1980 approach to find out if it would improve the census in hard-to-enumerate urban areas. For the two-stage approach, we mailed and collected short-form or 100-percent information first; 2 months later we mailed and collected sample forms with both 100-percent and sample questions from a sample of persons. For the 1980 method, we collected both types of information at the same time. A major objective of this test was to see if first collecting just the basic 100-percent information in an area like Jersey City could expedite the overall census process.

We also examined two techniques to improve identification of individual units within multiunit apartment buildings. In one procedure, the U.S. Postal Service attempted to list for us the exact apartment designations for all multiunit buildings. In a second procedure, the Census Bureau inspected each multiunit building to verify our addresses on a unit-by-unit basis.

In Jersey City, as in Tampa, we tested new concepts in automation--an automated address list, automated questionnaire check-in using a unique bar code for each address, and a distinct separation of district office and processing office functions where questionnaires were mailed directly to the Jeffersonville, Indiana processing office for immediate processing.

8/1/85

QUESTION 8: I understand that the Census Bureau had some very disappointing results in its response rates during the Jersey City test. What were the results?

ANSWER: The overall mail response rate for the 1985 test census of Jersey City, New Jersey was 38.3 percent. 1/ The national mail return rate for areas like Jersey City in 1980 was 75.6 percent.

1/ Mail response rate measures the proportion of mail returns out of the total questionnaires mailed out. This rate should not be confused with the return rate which is the proportion of occupied housing units that return a questionnaire.

8/1/85

QUESTION 9: To what do you attribute the apparent failure of the Jersey City residents to respond?

ANSWER: Traditionally, mail response rates in hard-to-enumerate inner city areas are lower than other areas. Mail response rates during census tests are also lower than mail response rates in the same area during the census itself. The mail response from Jersey City is quite similar to the response rates in our 1978 dress rehearsal in lower Manhattan. (For detailed comparisons, see the attached chart.)

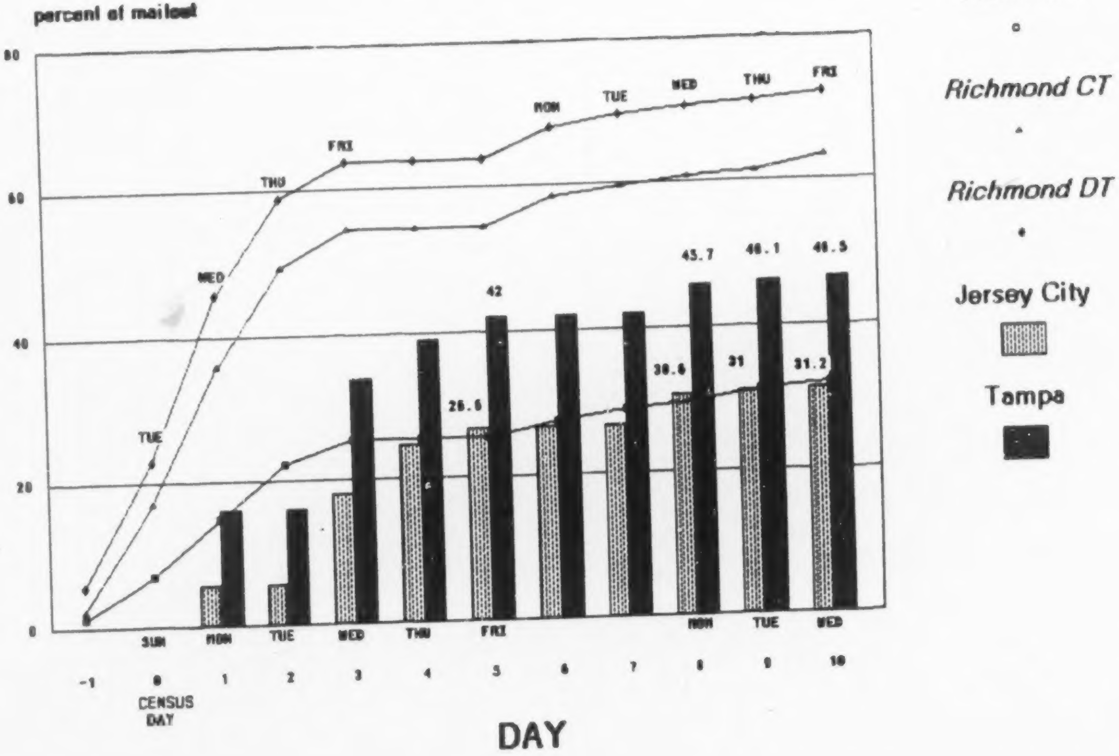
In a test census, where only a small portion of the audience will be asked to participate in the test, the media may choose not to air public service announcements or may choose to air fewer than they would during a decennial. Because Jersey City is only a small segment of the much larger metropolitan New York electronic media market, radio and television publicity was limited. This may decrease the impact of census publicity efforts and, consequently, the mail response rate.

To further investigate why housholds did not return their census questionnaires, we conducted a small survey of 200 nonresponding households in both Jersey City and Tampa. In general, we found that lack of response was not from lack of knowledge about the census. Even though our publicity efforts were limited, most respondents admitted they were exposed to census publicity. What we need to do is go the next step and make our publicity address the concerns of the public. Although the source and type of publicity varied by demographic groups, it appears that our future publicity efforts need to emphasize more strongly confidentiality, the legal requirement to participate, and to improve the understanding of how census results are used. Such changes in the publicity messages may help to motivate people to take the test census seriously and participate.

Other factors that may have contributed to the low mail response rate in Jersey City include indifference because of growth of surveying in general and possible confusion with the mayoral campaign that was conducted at the same time as the test census.

1985 TEST DAILY CUMMULATIVE RATE

COMPARED TO 1978 DRESS REHEARSAL



[illegible]/1/85

QUESTION 10: Even though the response rate was disappointing in Jersey City, what knowledge has the Census Bureau gained from the results of that test census?

ANSWER: We have learned a great deal from the Jersey City test and, therefore, we consider our 1985 test census in Jersey City to be successful. The operations that went well show us that we are on the right track and where to refine our efforts in later tests. The operations that had problems show us options that are not viable or need much more work.

We were able to develop an automated address control file. This file allowed us to do automated check-in using bar-code technology. Also, while we did not formally test key data entry equipment, we learned that it functions smoothly and efficiently in a census environment.

We also learned that we are able to begin processing earlier in a location that was separate from the district office. (The processing office was in Jeffersonville, Indiana). The effect of this is to remove the paper from the district office as soon as possible. Almost everyone agrees that is a major advantage over the 1980 procedure.

Turning to census methodology, we learned that a two-stage census is probably not viable. We tested a two-stage census in Jersey City to see if first collecting just the basic 100-percent data in a hard-to-enumerate urban area could expedite the overall census process.

As expected, the mail response rate 1/ for the 100-percent information forms was higher than the mail response rate for the sample questionnaire, namely, 38.7 percent as compared to 31.4 percent (modified 1980 system). However, the mail response rate on the second stage mailing of the sample questionnaire was extremely low, only 15 percent. At this point, it does not appear that the two-stage method will produce an improvement over the 1980 method. The small initial gain in the short-form, or first stage, mail response would be more than offset by the difficulty of finishing the second stage if this kind of second stage response were typical.

We learned that we can implement a two-phase local review program and that the two-phase approach is better than the one-phase approach used in 1980. In 1985 we took our first step toward improving our 1990 Local Review Program. We expanded our review process to include a precensus local review in addition to a postcensus local review, as in 1980. Adding the precensus phase was successful and made the postcensus local review go better as well.

1/ Mail response rate measures the proportion of mail returns out of the total questionnaires mailed out. This count should not be confused with the return rate which is the proportion of occupied housing units that return a questionnaire.

We learned that we must do much more in publicity and outreach in order to obtain a high mail return rate. We found overall mail response rates were low, so we conducted a survey of non-responding households to find out why. Even though our publicity efforts were limited, most respondents admitted that they were exposed to census publicity. What we need to do is go the next step and make our publicity address the concerns of the public. It appears that our future publicity efforts need to emphasize more strongly confidentiality, the legal requirement to participate, and to improve the understanding of how census results are used so that people will take the test census seriously and be motivated to participate.

We learned that we have to work much harder to obtain an adequate workforce. We experienced some difficulties in hiring enumerators and we will be working to improve this situation in future tests. We have just instituted a Census Bureau-wide task force chaired by the Chief of the Field Division to address this problem.

We also learned that we need to improve our methods to provide foreign language assistance. The procedures for distributing Spanish questionnaires were similar to those used in the 1980 census except that delivery was controlled from the processing office rather than in the collection office. While we modified the 1980 procedures to reflect this change, we found that we need to refine them further in later tests. We also will experiment with new ways to provide foreign-language assistance such as establishing store front census offices in multi-lingual neighborhoods.

8/1/85

QUESTION 11: I understand that the Census Bureau has planned a survey to interview nonrespondents in Jersey City and Tampa to determine why people did not respond to the questionnaires. Was the survey ever completed? What were the results?

ANSWER: We conducted a small survey of 200 nonresponding households in both sites to find out why people did not respond to the questionnaires. The survey yielded the following general information.

1. There was some evidence that the census forms were thrown away by respondents who did not open the envelopes.
2. There was no indication that respondents were turned off by the Jeffersonville return address.
3. The number of cases was too small to know whether respondents were turned off or intimidated by the design of the form.

In general, we found that respondents were exposed to publicity about the census, but not through multiple sources. More specific information about the nature of the publicity could not be obtained within the time constraints of the survey.

Although thirty-eight percent of the households interviewed said that they did not receive a questionnaire, we have no evidence to believe that the postal service failed to deliver questionnaires at that level. Previous research has shown us that a large number of persons, for a number of reasons, report nonreceipt of the census forms, when we know that the forms were delivered. For example, we did a tightly controlled research project following the 1980 census in which 31 percent of the persons interviewed stated they had not received questionnaires.

The results of the 1985 study are attached for your information.

REPORT ON

~~RESULTS OF THE~~ NONRESPONSE FOLLOWUP SUPPLEMENT IN THE 1985 TEST CENSUSES OF JERSEY CITY AND TAMPA

by

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NOTE: The data in this report are preliminary and tentative in nature. Users of the research memoranda should understand that these documents are prepared for internal office use, with the aim of circulating information among Census Bureau staff members as quickly as possible. These memoranda, therefore, do not undergo the careful review and clearance normally associated with published census documents. Conclusions and recommendations contained herein essentially reflect the thoughts of certain staff members at the time of publication and should not be interpreted as statements of Census Bureau position.

I. BACKGROUND

The Nonresponse Followup Supplement was planned and executed after the 1985 Test Censuses of Jersey City, New Jersey and Tampa, Florida were underway. Its purpose was to gather data from census nonrespondents about behaviors thought to affect the disappointing level of mail return of the census self-enumerative forms.

Four explanations were initially offered for the low rates of mail return in the 1985 Test Censuses. They were:

1. census forms were thrown away;
2. respondents were turned off by the Jeffersonville return address;
3. respondents were turned off or intimidated by the design of the census form; and
4. we had the wrong kind of publicity, which was unable to overcome respondent apathy.

The Nonresponse Followup Supplement collected information about each of these hypothesized explanations. Attachment A is a copy of the questionnaire.

II. SUMMARY

Tabulation of the results of the Nonresponse Followup Supplement yields some suggestions about why people did not mail back their census forms. However, these should not be taken as conclusive results, or as representative of any population other than the survey respondents themselves. This is the case because there were problems with data collection that yielded a final database which is smaller than intended, which does not reflect the original sample design, and which was not selected randomly. With these caveats in mind the following statements related to the hypotheses that prompted the Supplement to be conducted can be made.

1. There appears to be some evidence that census forms were thrown away by respondents who did not open the envelope.
2. There is no indication that respondents were turned off by the Jeffersonville return address.
3. The number of cases is too small to know whether respondents were turned off or intimidated by the design of the form.
4. In general, respondents were exposed to publicity about the census, but not through multiple sources. More specific information about the nature of the publicity could not be obtained within the time constraints of the Nonresponse Followup Supplement interview.

In addition, these interviews suggest that nonreceipt of a census form may be a large contributor to nonmail return. Thirty-eight percent of the people interviewed said the form was not received; in approximately two-fifths of these (16 percent of the entire sample) there was some ambiguity about whether census forms may have been received in these households. The ambiguity was introduced because no household members other than the initial respondent were contacted in the survey. However, fully 22 percent of the people interviewed said that they definitely did not receive a form and that there was no one else who might have seen the envelope.

III. SURVEY DESIGN AND DATA COLLECTION

In the Nonresponse Followup Supplement, the mail response process was defined as having four stages: receipt of the census form, opening the envelope, starting to fill out the census form, and mailing it back. The Supplement contained a series of questions designed to ascertain which of these stages was responsible for dropout from the mail response process. In addition, questions that would shed light on the initial hypotheses about reasons for dropout were included. The questionnaire was designed to be administered in a two-minute interview.

Data for the Supplement were collected simultaneously with the beginning of Nonresponse Followup (hence the name). The sample was selected from the areas of the test census that had the lowest mail return rates. Twelve interviewer assignments were created in each test site: in Tampa, one followup assignment was selected at random from each of the twelve Census Block Numbering Areas (CBNAs) with the lowest mail return rates. In Jersey City, the six CBNAs with the lowest mail return rates were selected, and two followup assignments were selected within each one; the first was randomly selected from the twostage panel and the second was randomly selected from the modified 1980 panel. Interviewing was to continue within these assignments until 200 completed interviews had been obtained in each site.

In each of the selected assignments, an experienced interviewer was supposed to accompany a Nonresponse Followup enumerator and, at the end of each followup enumeration, to conduct the Supplement interview. In Tampa the interviewing was done by Group Quarters enumerators who had been hired to participate in an earlier census operation; in Jersey City the interviewing was done by followup enumerators and telephone questionnaire assistance enumerators, who had no interviewing experience prior to the beginning of Nonresponse Followup.

Data collection began on April 10 and continued until April 12 in Tampa and April 19 in Jersey City. No response rates were calculated for the survey, due to the quota nature of the sample.

In Tampa, 167 interviews were completed in nine enumerator assignments, but correct assignment could be verified (both were correct) for only two of nine interviewers. In Jersey City, 137 interviews were completed in nine of the twelve sampled enumerator assignments, and 29 interviews were completed in out-of-sample enumerator assignments.

No field edit was performed in the collection offices and interviewers had numerous problems in following the skip patterns in the questionnaire. As a result, nine cases were deleted in Tampa because of problems such as inconsistent responses within the questionnaire. In Jersey City, 57 cases were deleted because of problems with the work of one enumerator who conducted over 40 percent of the total completed interviews, and whose interviews all had the same basic response pattern. To increase the number of cases for analysis, and in view of the already distorted sampling plan, the 29 out-of-sample interviews were included in the database.

Thus, the total database for these tabulations includes 267 cases: 158 from Tampa and 109 from Jersey City. Of these, 146 respondents from Tampa lived at the sampled address on Census Day, as did 105 respondents from Jersey City. These 251 Census nonrespondents who reported in the Nonresponse Followup Supplement that on Census Day they lived at the address where the interview occurred constitute the base of eligible respondents for the tables presented in this report.

IV. RESULTS

Tabulations showing frequencies and percentages are presented and discussed in the following section. Since some cell sizes are quite small and the percentages not very stable, some of the discussion is in terms of the raw numbers rather than percentages. Data are presented separately by test site but are generally discussed only in total, because between-site comparisons are generally unstable.

A. The Mail Response Process

Table 1 and Figure 1 present the distribution of self-reported participation in the mail response process. Twenty-three percent of the respondents interviewed said that they definitely did not receive a census form--that is, they themselves did not see one and there were no other household members who could have seen the form. An additional 16 percent of the respondents interviewed said they did not receive a census form; however, the receipt or nonreceipt of forms at these households is ambiguous either because there were other household members who could have seen the envelope or because the interviewer did not establish whether there were any other household members.

About 13 percent of respondents claim to have mailed back the forms. About 15 percent percent of respondents reported they received the form but did not open the envelope; about 19 percent reported opening the envelope but failing to start the form, and 15 percent reported starting to fill out the form but never mailing it back. This distribution varied only slightly between the Jersey City and Tampa sites.

The majority of respondents (72 percent) were Black. The proportion of Blacks in both sites reporting nonreceipt of the form was slightly less than the total proportion, as was also true with reports of mailback; therefore, their proportion at other points in the response process is slightly greater than that observed for the total sample (see Table 2, top panel).

The top panel of Table 3 shows that the majority of respondents resided in multi-unit structures. However, there is little difference from the total in the distribution of the response behaviors by housing type.

The majority of respondents reported knowledge of the census prior to contact with Nonresponse Followup interviewers. However, only slightly less than 50 percent of the respondents who claimed no prior knowledge of the census said they had not received a census form (see Table 4). The remainder reported response behaviors that were inconsistent with their claim of no prior knowledge ("before today") of the census, such as indicating receipt of the census form but failure to fill the form and mail it back. Also, some respondents reported prior knowledge of the census but no answers were recorded for specific sources of information.

Most respondents who did report prior knowledge of the census indicated only one source of information (see Table 5). No table of specific sources mentioned by respondents is included. However, there were 212 sources mentioned in total; 73 were mentioned by 63 respondents in Jersey City; 139 were mentioned by 90 respondents in Tampa. In both sites, most respondents mentioned only one source. In Jersey City, the most frequently mentioned source was the newspaper (29), followed by people talking (19) and TV (8). In Tampa, the most frequently mentioned source was TV (44), followed by newspaper (24), radio (24), and people talking (19). Overall, except for the mailback rates, there is little difference in response behavior between those who said they knew of the census before Nonresponse Followup and those who did not.

B. Nonreceipt of the Census Mailing Packet and Perception of the Envelope

Respondents who said they had not received a census form were asked whether anyone else in the household might have seen the envelope. However, in the interest of time, any other household members who might have seen it were not questioned directly. Some ambiguity about whether the form was actually received is apparent, and that ambiguity is categorized in Tables 6 and 7 as "possibly received by other household member."

About 40 percent of persons interviewed did not definitely acknowledge receiving a census form, i.e., they reported either not receiving the form themselves or not being sure whether they received the form. As Table 6 shows, this figure does not vary by site. However, in about 13 percent of the households there is a possibility that someone else may have receive a form without the survey respondent's knowledge. In an additional eight cases (3.2 percent of the eligible interviews) responses were not recorded to the question about other household members, so we cannot distinguish between "not received" and "possibly received by other household member" for these cases.

Table 7 shows that reports of definite receipt of the form were only slightly higher in single family dwellings than in multi-unit structures.

Table 8 contains impressions of the appearance of the census envelope among respondents who said they had not received a form in the mail. Among those who had not definitely received the form, about 70 percent thought the envelope looked important when the Nonresponse Followup Supplement interviewer showed it to them. About 15 percent thought it looked like junk mail.

C. Receiving the Form, But Not Opening the Envelope

As Table 9 shows, about 75 percent of those who reported receiving the form said they opened the envelope. The remaining 25 percent of respondents who reported receiving the form did not open the envelope or proceed to subsequent stages in the response process.

Respondents who reported not opening the envelope were asked what happened to it and why they didn't open the envelope. About 35 percent of these respondents reported doing nothing with the envelope and another 35 percent thought it had been lost, destroyed, or thrown away (see Table 10). The main reason respondents reported not opening the envelope was that they "never got around to it" (35 percent) (Table 11).

D. Opening the Envelope, But Not Starting to Fill Out the Form

Table 12 shows that of those who reported opening the envelope, about 40 percent (46/116) reported not starting to fill out the form. About 15 percent more respondents in Tampa said they started the form than in Jersey City.

Respondents who did not start filling out the form were asked what happened to the form and why it was not started. About 55 percent of those respondents said they did nothing with the form, while about 35 percent said the form was lost, thrown away, or accidentally destroyed (see Table 13).

About 36 percent of respondents said the reason they didn't start the form was that they never got around to it. This reason was mentioned by about 50 percent of those interviewed in Jersey City, but only 20 percent of those interviewed in Tampa. Only 5 of 47 persons who reported dropping out at this point said the form looked too hard, but 4 of these were in Tampa (Table 14). The majority of the remaining respondents reported "other" reasons such as illness, language problems or loss of the form.

E. Starting to Fill Out the Form, But Not Mailing It Back

Among those who started filling out the form, over half (about 54 percent) failed to mail it back or didn't know if they had mailed it back. There were 11 such respondents in Jersey City and 26 in Tampa (see Table 15). None of these respondents indicated "never hearing of the Jeffersonville, Indiana address" or "problems with the return envelope" as reasons for not returning the form. Among respondents who reached this point in the response process, most of the forms were lost, destroyed, left unfilled, or forgotten about.

F. Perceptions of the Census Form

Among those who dropped out of the response process prior to filling the form, about 13 percent thought the envelope or form looked like junk mail (see Table 16). Those who said they had not received the form and were shown the envelope by the interviewer gave this response more frequently than those who said they received the form but did not open it or start filling it.

Respondents who reported not receiving the form or not opening the envelope and who responded that the envelope looked like junk mail were asked about the specific characteristics of the envelope that elicited the junk mail response. Several alternatives were provided (e.g., Jeffersonville return address, bulk rate stamp, address label, color, print, other, DK) and interviewers were instructed to mark all that applied.

No table of detailed reasons mentioned is provided. However, the total number of reasons mentioned by those who reported they had not definitely received the mailing packet was 31, with 9 mentions by 9 respondents in Jersey City and 22 mentions by 15 respondents in Tampa. Among these respondents the Jeffersonville return address was not mentioned.

The bulk rate stamp, label, color, print, other and "DK" responses were mentioned with about equal (albeit low) frequency.

The total number of reasons mentioned by those who reported they had not opened the mailing packet was 4, with mentions by 3 respondents in Jersey City and 1 mention by 1 respondent in Tampa. Among these respondents, the bulk rate stamp was the only feature to be specifically mentioned.

The junk mail response is so infrequently observed that specific characteristics of the envelope or form which elicited this response cannot be studied with these data.

Table 1: Self-Reported Participation in the Various Stages of the Mail Response Process

	Form Not Received	Receipt Ambiguous	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
Both Sites	22.7% (57)	15.9% (40)	15.1% (38)	18.7% (47)	14.7% (37)	12.7% (32)	100% (251)
Jersey City	27.6% (29)	11.4% (12)	17.1% (18)	21.9% (23)	10.5% (11)	11.4% (12)	100% (105)
Tampa	19.2% (28)	19.2% (28)	13.7% (20)	16.4% (24)	17.8% (26)	13.7% (20)	100% (146)

FIGURE 1: SELF-REPORTED PARTICIPATION IN MAIL RESPONSE PROCESS (BOTH SITES)

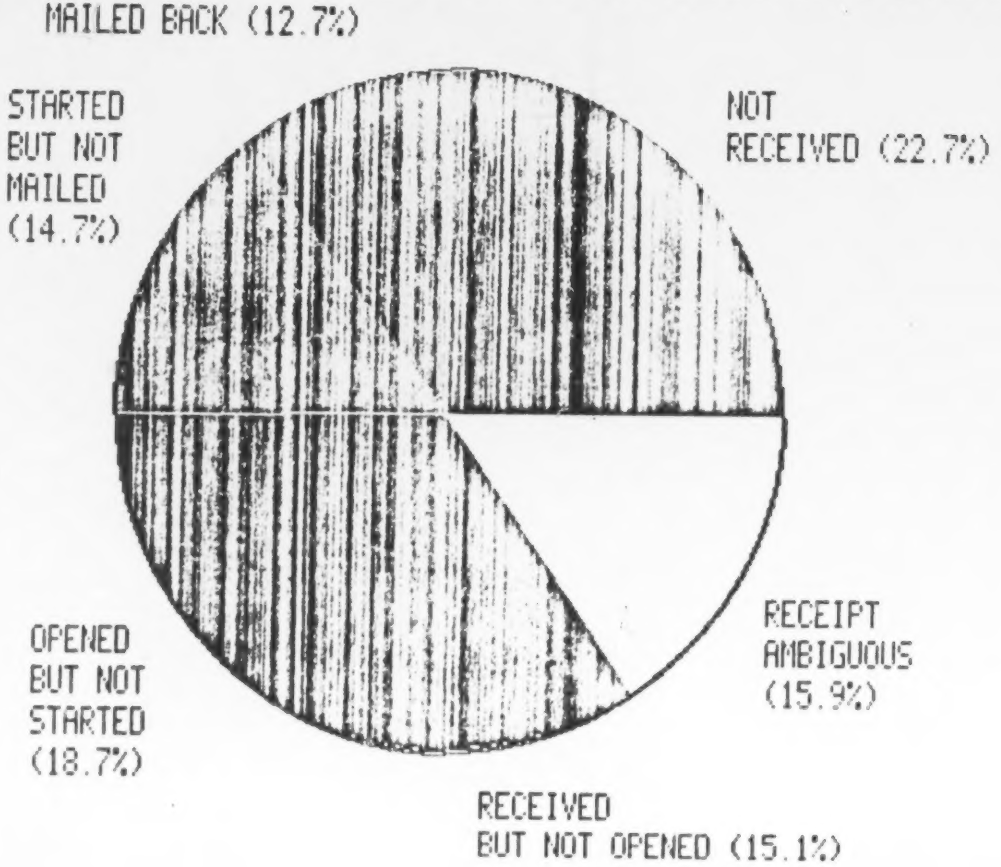

Table 2: Self-Reported Mail Response Behavior by Race/Ethnicity

BOTH SITES

	Form Not Received	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
All Eligible Households	38.6% (97)	15.1% (38)	18.7% (47)	14.7% (37)	12.7% (32)	100% (251)
White Not Hisp.	50.0% (20)	7.5% (3)	15.0% (6)	10.0% (4)	17.5% (7)	100% (40)
Black Not Hisp.	36.1% (65)	17.2% (31)	19.4% (35)	16.1% (29)	11.1% (20)	100% (180)
Spanish/ Hisp.	40.9% (9)	13.6% (3)	18.2% (4)	18.2% (4)	9.1% (2)	100% (22)
Other	100% (1)	100% (1)	-- (0)	-- (0)	-- (0)	100% (2)
DK	28.6% (2)	-- (0)	28.6% (2)	-- (0)	42.8% (3)	100% (7)

JERSEY CITY

	Form Not Received	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
All Eligible Households	39.0% (41)	17.1% (18)	21.9% (23)	10.5% (11)	11.4% (12)	100% (105)
White Not Hisp.	66.7% (4)	-- (0)	-- (0)	-- (0)	33.3% (2)	100% (6)
Black Not Hisp.	37.6% (32)	17.6% (15)	22.4% (19)	11.8% (10)	10.6% (9)	100% (85)
Spanish/ Hisp.	45.5% (5)	18.2% (2)	27.3% (3)	9.1% (1)	-- (0)	100% (11)
Other	-- (0)	100% (1)	-- (0)	-- (0)	-- (0)	100% (1)
DK	-- (0)	-- (0)	50.0% (1)	-- (0)	50.0% (1)	100% (2)

TAMPA

	Form Not Received	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
All Eligible Households	38.4% (56)	13.7% (20)	16.4% (24)	17.8% (26)	13.7% (20)	100% (146)
White Not Hisp.	47.1% (16)	8.8% (3)	17.6% (6)	11.8% (4)	14.7% (5)	100% (34)
Black Not Hisp.	34.7% (33)	16.8% (16)	16.8% (16)	20.0% (19)	11.6% (11)	100% (95)
Spanish/ Hisp.	36.4% (4)	9.1% (1)	9.1% (1)	27.3% (3)	18.2% (2)	100% (11)
Other	100% (1)	-- (0)	-- (0)	-- (0)	-- (0)	100% (1)
DK	40.0% (2)	-- (0)	20.0% (1)	-- (0)	40.0% (2)	100% (5)

Table 3: Self-Reported Mail Response Behavior by Housing Type

BOTH SITES

	Form Not Received	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
All Eligible Households	38.6% (97)	15.1% (38)	18.7% (47)	14.7% (37)	12.7% (32)	100% (251)
Single Family Dwelling Unit	36.7% (29)	16.5% (13)	20.2% (16)	15.2% (12)	11.4% (9)	100% (79)
Multi-unit Structure	40.4% (65)	14.9% (24)	17.4% (28)	14.3% (23)	13.0% (21)	100% (161)
Not Reported	27.2% (3)	9.1% (1)	27.2% (3)	18.2% (2)	18.2% (2)	100% (11)

JERSEY CITY

	Form Not Received	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
All Eligible Households	39.0% (41)	17.1% (18)	21.9% (23)	10.5% (11)	11.4% (12)	100% (105)
Single Family Dwelling Unit	38.9% (14)	11.1% (4)	25.0% (9)	11.1% (4)	13.9% (5)	100% (36)
Multi-unit Structure	39.7% (27)	20.6% (14)	20.6% (14)	8.8% (6)	10.3% (7)	100% (68)
Not Reported	-- (0)	-- (0)	-- (0)	100.0% (1)	-- (0)	100% (1)

TAMPA

	Form Not Received	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
All Eligible Households	38.4% (56)	13.7% (20)	16.4% (24)	17.8% (26)	13.7% (20)	100% (146)
Single Family Dwelling Unit	34.9% (15)	20.9% (9)	16.3% (7)	18.6% (8)	9.3% (4)	100% (43)
Multi-unit Structure	40.9% (38)	10.8% (10)	15.1% (14)	18.3% (17)	15.1% (14)	100% (93)
Not Reported	30.0% (3)	10.0% (1)	30.0% (3)	10.0% (1)	20.0% (2)	100% (10)

Table 4: Self-Reported Mail Response Behavior by Previous Knowledge of the Census

BOTH SITES

	Form Not Received	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
All Eligible Households	38.6% (97)	15.1% (38)	18.7% (47)	14.7% (37)	12.7% (32)	100% (251)
Previous Knowledge	33.8% (54)	15.6% (25)	18.8% (30)	16.9% (27)	15.0% (24)	100% (160)
No Previous Knowledge	47.8% (43)	14.4% (13)	18.9% (17)	10.0% (9)	8.9% (8)	100% (90)
Not Ascertained	-- (0)	-- (0)	-- (0)	100% (1)	-- (0)	100% (1)

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	Form Not Received	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
All Eligible Households	39.0% (41)	17.1% (18)	21.9% (23)	10.5% (11)	11.4% (12)	100% (105)
Previous Knowledge	35.3% (24)	17.6% (12)	25.0% (17)	10.3% (7)	11.8% (8)	100% (68)
No Previous Knowledge	47.2% (17)	16.7% (6)	16.7% (6)	8.3% (3)	11.1% (4)	100% (36)
Not Ascertained	-- (0)	-- (0)	-- (0)	100.0% (1)	-- (0)	100% (1)

TAMPA

	Form Not Received	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
All Eligible Households	38.4% (56)	13.7% (20)	16.4% (24)	17.8% (26)	13.7% (20)	100% (146)
Previous Knowledge	32.6% (30)	14.1% (13)	14.1% (13)	21.7% (20)	17.4% (16)	100% (92)
No Previous Knowledge	48.1% (26)	13.0% (7)	20.4% (11)	11.1% (6)	7.4% (4)	100% (54)
Not Ascertained	-- (0)	-- (0)	-- (0)	-- (0)	-- (0)	100% (0)

Table 5: Self-Reported Mail Return Behavior by Total Number of Sources of Information about the Census

BOTH SITES

	Form Not Received	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
All Eligible Households	38.6% (97)	15.1% (38)	18.7% (47)	14.7% (37)	12.7% (32)	100% (251)
No Knowledge	41.8% (41)	14.3% (14)	19.4% (19)	11.2% (11)	13.3% (13)	100% (98)
1 source	38.4% (43)	14.3% (16)	18.8% (21)	15.2% (17)	13.4% (15)	100% (112)
2 sources	29.0% (9)	19.4% (6)	22.6% (7)	19.3% (6)	9.7% (3)	100% (31)
3+ sources	40.0% (4)	20.0% (2)	-- (0)	30.0% (3)	10.0% (1)	100% (10)

JERSEY CITY

	Form Not Received	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
All Eligible Households	39.0% (41)	17.1% (18)	21.9% (23)	10.5% (11)	11.4% (12)	100% (105)
No Knowledge	45.2% (19)	16.7% (7)	16.7% (7)	9.5% (4)	11.9% (5)	100% (42)
1 source	39.6% (21)	17.0% (9)	22.6% (12)	9.4% (5)	11.3% (6)	100% (53)
2 sources	10.0% (1)	20.0% (2)	40.0% (4)	20.0% (2)	10.0% (1)	100% (10)
3+ sources	-- (0)	-- (0)	-- (0)	-- (0)	-- (0)	100% (0)

TAMPA

	Form Not Received	Received But Not Opened	Opened But Not Started	Started But Not Mailed	Mailed Back	Total
All Eligible Households	38.4% (56)	13.7% (20)	16.4% (24)	17.8% (26)	13.7% (20)	100% (146)
No Knowledge	39.3% (22)	12.5% (7)	21.4% (12)	12.5% (7)	14.3% (8)	100% (56)
1 source	37.3% (22)	11.9% (7)	15.3% (9)	20.3% (12)	15.3% (9)	100% (59)
2 sources	38.1% (8)	19.0% (4)	14.3% (3)	19.0% (4)	9.5% (2)	100% (21)
3+ sources	40.0% (4)	20.0% (2)	-- (0)	30.0% (3)	10.0% (1)	100% (10)

Table 6: Self-Reported Receipt Status

	Definitely Received	Possibly Received By Other HH Member	Not Received	Missing*	Total
Both sites	61.4% (154)	12.7% (32)	22.7% (57)	3.2% (8)	100% (251)
Jersey City	61.0% (64)	9.5% (10)	27.6% (29)	1.9% (2)	100% (105)
Tampa	61.6% (90)	15.1% (22)	19.2% (28)	4.1% (6)	100% (146)

*Includes cases in which responses to determine presence of other household members were not recorded, preventing classification into either "possibly received by other household member" or "not received".

Table 7: Self-Reported Receipt Status by Housing Type

BOTH SITES

	Definitely Received	Possibly Received By Other HH Member	Not Received	Missing*	Total
Single Family Dwelling Unit	63.3% (50)	15.2% (12)	19.0% (15)	2.5% (2)	100% (79)
Multi-unit Structure	59.6% (96)	12.4% (20)	24.2% (39)	3.7% (6)	100% (161)
Missing	72.7% (8)	-- (0)	27.3% (3)	-- (0)	100% (11)

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	Definitely Received	Possibly Received By Other HH Member	Not Received	Missing*	Total
Single Family Dwelling Unit	61.1% (22)	13.9% (5)	22.2% (8)	2.8% (1)	100% (36)
Multi-unit Structure	60.3% (41)	7.4% (5)	30.9% (21)	1.5% (1)	100% (68)
Missing	100% (1)	-- (0)	-- (0)	-- (0)	100% (1)

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	Definitely Received	Possibly Received By Other HH Member	Not Received	Missing*	Total
Single Family Dwelling Unit	65.1% (28)	16.3% (7)	16.3% (7)	2.3% (1)	100% (43)
Multi-unit Structure	59.1% (55)	16.1% (15)	19.4% (18)	5.4% (5)	100% (93)
Missing	70.0% (7)	-- (0)	30.0% (3)	-- (0)	100% (10)

*Includes cases in which responses to determine presence of other household members were not recorded, preventing classification into either "possibly received by other household member" or "not received".

Table 8: Impressions of Envelope Appearance by Respondents Who Did Not Report Receiving a Form in the Mail

	Important	Junk Mail	Other	DK	Missing	Total
Both sites	69.1% (67)	16.5% (16)	3.1% (3)	6.2% (6)	5.1% (5)	100% (97)
Jersey City	70.7% (29)	19.5% (8)	— (0)	4.9% (2)	4.9% (2)	100% (41)
Tampa	67.9% (38)	14.3% (8)	5.4% (3)	7.1% (4)	5.4% (3)	100% (56)

Table 9: Self-Reports of Opening the Envelope Among Households that Reported Receiving a Form in the Mail

	Yes	No	DK	Total
Both sites	75.3% (116)	16.9% (26)	7.8% (12)	100% (154)
Jersey City	71.9% (46)	23.4% (15)	4.7% (3)	100% (64)
Tampa	77.8% (70)	12.2% (11)	10.0% (9)	100% (90)

Table 10: Disposition Of Unopened Envelopes Among Households that Reported Receiving a Form in the Mail

	Gave to someone to fill	Lost	Thrown Away	Accidentally Destroyed	Nothing; Left Unfilled	Other	DK	Total
Both sites	2.6% (1)	10.5% (4)	21.0% (8)	5.3% (2)	36.8% (14)	2.6% (1)	5.3% (2)	100% (38)
Jersey City	-- (0)	5.6% (1)	22.2% (4)	11.1% (2)	50.0% (9)	-- (0)	11.1% (2)	100% (18)
Tampa	5.0% (1)	15.0% (3)	20.0% (4)	-- (0)	25.0% (5)	5.0% (1)	-- (0)	100% (20)

Table 11: Reason For Not Opening The Envelope Among Households that Reported Receiving a Form in the Mail

	Looked Like Junk Mail	Info. Is None Of The Gov'ts. Busn.	Never Got Around To It	Totally Forgot About It	Opposed To Surveys	Other	DK	Missing	Total
Both sites	7.9% (3)	-- (0)	34.2% (13)	7.9% (3)	-- (0)	26.3% (10)	13.1% (5)	7.9% (3)	100% (38)
Jersey City	16.7 (3)	-- (0)	33.3% (6)	11.1% (2)	-- (0)	22.3% (4)	-- (0)	16.7% (3)	100% (18)
Tampa	-- (0)	-- (0)	35.0% (7)	5.0% (1)	-- (0)	30.0% (6)	25.0% (5)	-- (0)	100% (20)

Table 12: Self-Reports of Starting to Fill Out the Form Among Households that Reported Opening the Envelope

	Yes	No	DK	Total
Both sites	59.5% (69)	39.6% (46)	0.9% (1)	100% (116)
Jersey City	50.0% (23)	47.8% (22)	2.2% (1)	100% (46)
Tampa	65.7% (46)	34.3% (24)	-- (0)	100% (70)

Table 13: Disposition of Unstarted Forms Among Households that Reported Opening the Envelope

	Gave to someone to fill	Lost	Thrown Away	Accidentally Destroyed	Nothing; Left Unfilled	Missing	Total
Both sites	8.5% (4)	12.8% (6)	12.8% (6)	10.6% (5)	55.3% (26)	4.2% (2)	100% (47)
Jersey City	4.3 (1)	8.7% (2)	13.0% (3)	4.3% (1)	60.9% (14)	8.7% (2)	100% (23)
Tampa	12.5% (3)	16.7% (4)	12.5% (3)	8.3% (4)	50.0% (12)	-- (0)	100% (24)

Table 14: Reasons For Not Starting to Fill Out the Form Among Households that Reported Opening the Envelope

	Looked Too Hard	Would Take Too Long	Looked Like Junk Mail	Infor. is None of the Gov'ts. Busn.	Never Got Around To It	Forgot	Other	DK	Total
Both sites	10.6% (5)	4.2% (2)	6.4% (3)	2.1% (1)	36.2% (17)	6.4% (3)	31.9% (15)	2.1% (1)	100% (47)
Jersey City	4.3% (1)	8.7% (2)	4.3% (1)	4.3% (1)	52.2% (12)	-- (0)	26.1% (6)	-- (0)	100% (23)
Tampa	16.7% (4)	-- (0)	8.3% (2)	-- (0)	20.8% (5)	12.5% (3)	37.5% (9)	4.2% (1)	100% (24)

Table 15: Self-Reports of Mailing Back the Census Form Mailback Status Among Households that Reported Starting to Fill out the Form

	Yes	No	DK	Total
Both sites	46.4% (32)	49.3% (34)	4.3% (3)	100% (69)
Jersey City	52.2% (12)	39.1% (9)	8.7% (2)	100% (23)
Tampa	43.5% (20)	54.3% (25)	2.2% (1)	100% (46)

Table 16: Perception Of Census Materials By Self-Reported Receipt Status

BOTH SITES

	Looked Like Junk Mail	Other	Total
Total	12.6% (22)	87.4 (152)	100% (174)
Not Received	17.4% (16)	82.6% (76)	100% (92)
Received but not opened	7.9% (3)	92.1% (35)	100% (38)
Opened but not started	6.8% (3)	93.2% (41)	100% (44)

JERSEY CITY

	Looked Like Junk Mail	Other	Total
Total	15.4% (12)	84.6% (66)	100% (78)
Not Received	25.6% (8)	79.4% (31)	100% (39)
Received but not opened	16.7% (3)	83.3% (15)	100% (18)
Opened but not started	4.8% (1)	95.2% (20)	100% (21)

TAMPA

	Looked Like Junk Mail	Other	Total
Total	10.4% (10)	89.6% (86)	100% (96)
Not Received	15.1% (8)	84.9% (45)	100% (53)
Received but not opened	-- (0)	100% (20)	100% (20)
Opened but not started	8.7% (2)	91.3% (21)	(23)

ATTACHMENT A

OMB No. 0607-0486 Approval Expires December 31, 1985

FORM DB-79
(4-8-85)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

SAMPLE

NONRESPONSE FOLLOWUP SUPPLEMENT

1985 CENSUS

NOTICE — Response to this inquiry **is required by law (title 13, U.S. Code)**. By the same law, your report to the Census Bureau is confidential. It may be seen only by sworn Census employees and may be used only for statistical purposes. The law also provides that copies retained in your files **are immune from legal process.**

a. CO

b. ID

c. CBNA

d. Block

e. Address
House number Street name Unit designation
City State ZIP code

f. Interviewer name Code

g. Assignment number

h. Outcome of this interview — *Mark (X) one box*
1 ☐ Complete 2 ☐ Partial 3 ☐ Refusal

i. Outcome of enumerator's interview — *Mark (X) one box*
1 ☐ Complete 2 ☐ Partial 3 ☐ Refusal

1. Were you living here on March 24, 1985?
1 ☐ Yes
2 ☐ No — ***END INTERVIEW.*** *SKIP to ~~18~~ 19 and complete without asking.*

2. As far as you know, did a census form come to this (house/apartment) last month—around the 21st?
1 ☐ Yes — *SKIP to 7*
2 ☐ No
9 ☐ DK

3. Just to be sure—did an envelope like this *(Show envelope)* **come in the mail recently?**
1 ☐ Yes — *SKIP to 7*
2 ☐ No
9 ☐ DK

4. Does an envelope like this *(Show envelope)* **look important or like junk mail to you?**
1 ☐ Important — *SKIP to 6*
2 ☐ Junk mail
3 ☐ Other — *Specify* ____________
9 ☐ DK

5. What is it about the envelope that (makes/could make) it look like junk mail to you?
Mark (X) all that apply.
1 ☐ Jeffersonville return address
2 ☐ Bulk rate stamp
3 ☐ Address label
4 ☐ Color
5 ☐ Print
6 ☐ Other — *Specify* ____________
9 ☐ DK

6. Is there someone else who lives here who might have seen the envelope without your knowing it?
1 ☐ Yes }
2 ☐ No } *SKIP to 17*

7. Did anyone ever open the envelope?
1 ☐ Yes — *SKIP to 11*
2 ☐ No
9 ☐ DK

8. As best you can remember, what happened to the form at that point?
1 ☐ Gave to someone else to fill out
2 ☐ Lost
3 ☐ Thrown away
4 ☐ Accidentally destroyed
5 ☐ Nothing; left unfilled
6 ☐ Other — *Specify* ____________
9 ☐ DK

9. Why didn't anyone open the envelope?
1 ☐ Looked like junk mail — *Continue with 10*
2 ☐ Information is none of the gov'ts business }
3 ☐ Never got around to it }
4 ☐ Totally forgot about it } *SKIP to 17*
5 ☐ Opposed to surveys }
6 ☐ Other — *Specify* ____________ }
9 ☐ DK

10. What is it about the envelope that made it look like junk mail to you?
Mark (X) all that apply.
1 ☐ Jeffersonville return address }
2 ☐ Bulk rate stamp }
3 ☐ Address label }
4 ☐ Color } *SKIP to 17*
5 ☐ Print }
6 ☐ Other — *Specify* ____________ }
9 ☐ DK

11. Did anyone start to fill out the form?
1 ☐ Yes — *SKIP to 14*
2 ☐ No
9 ☐ DK

Please **TURN** page and continue. →

12. As best you can remember, what happened to the form at that point?

1 ☐ Gave to someone else to fill
2 ☐ Lost
3 ☐ Thrown away
4 ☐ Accidentally destroyed
5 ☐ Nothing; left unfilled
6 ☐ Other – *Specify* ↴

____

9 ☐ DK

13. Why didn't anyone start to fill out the census form?

1 ☐ Looked too hard
2 ☐ Would take too long
3 ☐ Looked like junk mail
4 ☐ Information is none of the gov'ts business
5 ☐ Never got around to it
6 ☐ Totally forgot about it
7 ☐ Opposed to surveys
8 ☐ Census date had passed
10 ☐ Other – *Specify* ↴

____

9 ☐ DK

} *SKIP to 17*

14. Did anyone mail back the form?

1 ☐ Yes – *SKIP to 17*
2 ☐ No
9 ☐ DK

15. As best you can remember, what happened to the form at that point?

1 ☐ Gave to someone else to fill
2 ☐ Gave to someone else to mail
3 ☐ Lost
4 ☐ Thrown away
5 ☐ Accidentally destroyed
6 ☐ Nothing; left unfilled
7 ☐ Filled, but not mailed
8 ☐ Other – *Specify* ↴

____

9 ☐ DK

16. Why didn't anyone mail back the census form?

1 ☐ Too long
2 ☐ Too hard
3 ☐ Didn't like the questions
4 ☐ Never heard of J'Ville, Ind. address
5 ☐ Problems with the return envelope
6 ☐ Other – *Specify* ↴

____

9 ☐ DK

17. Before today, did you know that a census was being conducted in this area?

1 ☐ Yes
2 ☐ No – ***END INTERVIEW.*** *Complete items 19 through 22 by transcription.*

PC'80 DB-12 (4-6-81)

18. Where have you seen or heard things about the census?

Mark (X) all that apply.

1 ☐ Newspaper
2 ☐ Magazine
3 ☐ Radio
4 ☐ TV
5 ☐ Poster/sign
6 ☐ Handout/flyers
7 ☐ At a meeting
8 ☐ People talking
10 ☐ Other – *Specify* ↴

____

9 ☐ Don't remember

► COMPLETE FROM RESPONDENT'S ANSWERS TO THE CENSUS ENUMERATOR

19. Race/Ethnicity

1 ☐ White, not Hispanic
2 ☐ Black, not Hispanic
3 ☐ Spanish/Hispanic
4 ☐ Asian, Pacific Islander
5 ☐ American Indian
9 ☐ DK

20. Housing type

1 ☐ Single family dwelling unit
2 ☐ Multiunit structure

21. Surname

____

9 ☐ Not obtained in followup

22. Telephone number

____

9 ☐ Not obtained in followup

NOTES

8/1/85

QUESTION 12:	What are the goals and objectives of your test census in Mississippi?
ANSWER:	Our main objective at the Mississippi site is to test new ways for the Census Bureau to create and maintain address lists and ensure accurate delivery of the questionnaires in rural areas where some addresses have no house number or street name (such as P.O. Box 4 or Frank Jones, Rural Route 2). First, the Census Bureau will canvass the entire area to prepare an initial address list. Next, the United States Postal Service (USPS) will check the accuracy of that initial address list. The Census Bureau will then reconcile the differences between its list and the USPS corrections. In half of the Mississippi site, the Census Bureau will later do a further update of the address list and then the questionnaires will be delivered by the USPS. In the other half, the Census Bureau will deliver the questionnaires itself and, at the same time, update the address list. Other goals and objectives are to examine new techniques for automating questionnaire processing and management and control systems using a combined district office/processing office configuration, produce geographic products using a simulated TIGER system, test new questions and wording and better design of the questionnaire package, improve the Local Review Program, increase and improve census promotion activities, and refine enumeration techniques for American Indian reservations.

8/1/85

QUESTION 13: How many data entry machines will be used in the Mississippi test? How much do these machines cost?

ANSWER: We are ordering 25 data entry stations for the Mississippi test. Including printers, disks for data storage, and other equipment needed with the data entry system the total cost is about $85,000.

8/1/85

QUESTION 14: If this type of equipment is used in the 1990 census, how many machines would be needed nationwide? What would be the total cost for the equipment?

ANSWER: One cannot extrapolate from the number of stations ordered for the Mississippi test to the number needed for the nation.

There are several reasons for this. First, this is our initial try at a combined office with microcomputers. Second, we would never expect to use this type of office throughout the United States. Finally, we are still experimenting with timing requirements for various phases of enumeration and changes in these requirements affect the number of machines required.

If this type of equipment is used to key the 1990 census, our best estimates at this time are that the Census Bureau may need from 14,000 to 21,500 stations. Using 1986 unit costs (and a combination of rental and purchase), this equipment would cost between $40 million and $65 million. Of course, we have other equipment needs as well. (Also, one should keep in mind that the minimum number of key stations we would need even if we used FOSDIC or OMR is 6,000 to 8,000.)

8/1/85

QUESTION 15: Would you provide the subcommittee with copies of the Census Bureau's proposed test census questionnaires for both Los Angeles and Mississippi?

ANSWER: As required by the Paperwork Reduction Act of 1980, the Office of Management and Budget (OMB) is now reviewing the proposed Los Angeles and Mississippi test census questionnaires for clearance. We will be glad to supply Subcommittee staff with the draft questions. We should point out that, even if OMB approves these questions for the 1986 test census questionnaires, this does not mean they will be included on the 1990 questionnaire.

8/1/85

QUESTION 16: Are any of your test census or other activities specifically designed to find ways to reduce the size of the labor force which census employed in 1980?

ANSWER: Many future test census activities are aimed at reducing the large temporary labor force in the district offices while improving the quality of census data. These activities include:

- Automating check-in and edit procedures, map production and cost and progress reporting, and other operations which were done clerically in 1980.

- A publicity campaign which, coupled with the mail reminder cards, will focus on maintaining or increasing the mail return rates. An increase in mail return rate will potentially decrease the need for a large temporary workforce to follow-up on nonrespondents.

- Improved productivity through using telephone follow-up rather than personal visit for households that either did not mail in their questionnaire or that did not complete the questionnaire correctly.

- Improved productivity can also be achieved through better training along with a bonus pay method which will enable us to maintain an adequate workforce.

8/1/85

QUESTION 17:	What was the cost of training this temporary work force in 1980? Do you have any cost projections for 1990 for this activity?
ANSWER:	In 1980, some 460,000 persons were hired to work in the collection phase of the census with about 210,000 at the peak of activities in April and May. In many instances, training for operations was on-the-job training and the cost cannot be segregated from office salaries. For some of the large operations, however, we do have the following training costs (in 1980 dollars):

Training	Cost
Edit	$ 2.4 million
Nonresponse Follow-Up	$12.2 million
Telephone Follow-Up	$ 7.6 million
Special Place Enumeration	$ 2.8 million

At this time, we have not projected 1990 training costs for specific district office operations. These costs will depend, to some extent, on the degree of automation in the district offices and the automation scenario we choose in the fall of 1986.

QUESTION 18:	Will these people be paid by the hour or by the piece? Has this decision been made? When?
ANSWER:	That decision has not been made yet, although we are currently examining alternative methods of pay for temporary district office employees. We expect to make a decision on this issue by July of 1987.

8/1/85

QUESTION 19: Will you be able to hire local people with knowledge of each community to facilitate the Census Bureau's efforts?

ANSWER: Yes, the Census Bureau's policy on this issue is to hire individuals that are indigenous to a given area since these individuals bring first-hand knowledge of their communities to the enumeration process. In 1980, and in the 1985 tests, we were generally successful at accomplishing this goal. We are currently examining alternative recruiting sources and methods for 1990 such as increasing publicity efforts and extensive contact with various community-based organizations to increase our chances of satisfying this goal in areas where we have hiring problems.

QUESTION 20: What do you anticipate the cost of automation for the 1990 census to be?

ANSWER: We cannot answer that question specifically at this time because plans are not yet finished. We can give some general cost estimates for major aspects of automation such as concurrent collection and processing or, in other words, processing the census while enumerators are in the field.

At present, we estimate that the equipment needed to process the census while enumerators are in the field will cost between $70 million and $140 million (1985 dollars). These estimates are based on a combination of estimates and 1986 test census contract costs. Our current outyear ADP budget requests are at the low end of this spectrum, and may be revised upward later after decisions are made and technical uncertainties reduced.

8/1/85

QUESTION 22: If the automation plans are put in place by early 1987, wouldn't the role of Congress in reviewing proposed census questionnaires for subject in April 1987 and for question wording in April 1988 be severely limited, since any changes we recommend may disrupt or delay the automation plan?

ANSWER: No. Unless the changes are massive (for example, requiring a large number of questions with write-in responses), any changes could be accommodated within the planned automation framework. Given the fact that, through its ongoing oversight process, the Congress will be reviewing and advising on both our automation plans and our content plans, there will be ample opportunity for Congress to make recommendations early.

QUESTION 21: In your statement you discuss the difficulty of automating the recording of open-ended questions (that is, written answers by respondents). Why do you have to ask questions which require written answers?

ANSWER: Written entries are requested from respondents when the number of possible responses are so numerous they cannot be listed on the questionnaire. For example, in 1980 written entries were required in the race item so that American Indians could identify their tribal affiliations (over 400 possibilities).

8/1/85

QUESTION 23:	Are you planning to adjust the final 1990 census count? What are your cost projections for employing adjustment procedures?
ANSWER:	At this point, we do not know if we will recommend to the Congress that the 1990 census count be adjusted. Ideally, coverage in the 1990 census would be so good as to render academic the issue of whether to adjust counts. Such an ideal is unlikely to occur. We have embarked on a two-pronged strategy. On one front, we will try to improve the coverage provided by the basic census counts. At the same time, we will work to improve our methods of measuring coverage. Before the census, we will establish a specific set of criteria that will determine when and if the deficiencies of the counts will necessitate adjustment, and whether or not there is a statistically acceptable procedure to adjust the counts to correct small area deficiencies. At that point (mid-1988), the Census Bureau will make its recommendation to the Congress. Should the Census Bureau recommend that we adjust census counts, and the Congress concur, we estimate that the implementation of adjustment would cost as much as $25 million. Implementation of adjustment will include increased size of an evaluation sample to measure accuracy and the specific actions that the Census Bureau will take after measuring the accuracy of the census counts to adjust the census count down to the block level.

/

8/1/85

QUESTION 24: If adjustments are used, will you make available to the Congress the adjusted as well as the raw count?

ANSER: At this time, we do not know the answer to this question. The answer is dependent on several factors -- our ability to develop a reliable method to measure census coverage, our ability to implement an adjustment technique in time to meet the legally mandated delivery date for apportionment and redistricting counts, and the opinion of data users, particularly the Congress. We are concerned about the publication of two sets of official counts, but we may not be able to adjust apportionment and redistricting counts (even if we wanted to) in time to meet legal mandates. In any case, if we adjust the figures, we will provide information on how the adjusted counts were obtained.

QUESTION 25: I understand the importance of residency rules, (whom you count and where you count them) and the difficulty in counting "mobile" people such as students, vacationers, illegal aliens, people living overseas, and others. Has the Census Bureau determined these rules for 1990? If so, what are they?

ANSWER: As yet, we have not made final decisions on 1990 residency rules. We are considering modifications to the 1980 rules in three areas: enumeration of Americans overseas, naval personnel on ships, and boarding school students. We will make the final Census Bureau recommendations known to the Congress by this fall. By January of 1987, in order to proceed with other detailed preparations, we must decide the final residence rules. For your information, a copy of 1980 residence rules is attached.

ATTACHMENT

1980 DECENNIAL CENSUS RESIDENCE RULES

College students--College students were counted as residents of the area in which they were living while attending college, as they have been since 1950. Children in boarding school below the college level were counted at their parental home.

Citizens abroad--Americans who were overseas for an extended period (whether in the Armed Forces, working at a civilian job, going to school, retired, and so forth) were not enumerated in the 1980 census. Counts of Armed Forces and Federal civilian employees and dependents overseas were obtained from the Department of Defense and the Office of Personnel Management but were not used in the census. Americans who were temporarily abroad, on a vacation or business trip, for example, were counted at their usual residence in the United States.

Members of the Armed Services--Members of the Armed Forces living on a military installation were counted, as in every previous census, as residents of the area in which the installation was located. Armed Forces personnel not living on a military installation were counted as residents of the area in which they were living.

Each Navy ship was attributed to the municipality that the Department of the Navy designated as its homeport, except for those ships which were deployed to the 6th or 7th Fleet on Census Day. As was done in the 1970 census, naval personnel aboard deployed ships were defined in the 1980 census as part of the overseas population, because deployment to the 6th or 7th Fleet implies a long-term assignment.

In homeports with fewer than 1,000 naval personnel assigned to ships, the crews were counted aboard the ship. In homeports with 1,000 or more naval Personnel assigned to ships, the naval personnel who indicated that they had a usual residence within 50 miles of the homeport of their ship were attributed to that residence.

When a homeport designated by the Navy was contained in more than one municipality, ships homeported and berthed there on Census Day were assigned by the Bureau of the Census to the municipality in which the land immediately adjacent to the dock or pier was actually located. Other ships attributed by the Navy to that homeport, but which were not physically present and not deployed to the 6th or 7th Fleet on Census Day, were allocated to the municipality named on the Navy's homeport list.

Persons with two homes--The decision as to which of two residences to indicate as "usual" is generally left to the individual involved. If the person is not sure which residence to indicate as usual, the person is instructed to indicate the residence in which he or she spends the greater part of the year.

Persons with two homes were not, per se separately identified in the census. However, counts of persons staying in housing units occupied entirely by persons with a usual residence elsewhere were published in PC80-S1-6. (Persons staying in the house of a "permanent" resident were not included in the report, nor were persons staying in hotels, motels, or campgrounds.)

Members of Congress--Members of the U.S. Congress were sent a letter asking whether they wished to be enumerated as of their Washington residence or their home state address. This was simply a formal extension of our usual treatment of persons with two homes and not a unique residence rule.

Aliens, regardless of whether documented--Citizens of foreign countries having their usual residence (legally or illegally) in the United States on Census Day were included in the 1980 census enumeration. The only noncitizens excluded were those temporarily visiting or traveling in the United States or living on the premises of an embassy or consulate. There were no census questions which dealt with visas, visa type, or other documentation.

Transients--Persons in hotels, motels, etc., on the night of March 31, 1980 were requested to fill out a census form, if they indicated that no one was at their usual residence to report them in the census. This information was then sent to the district office in which that residence was located. Persons who indicated they had no usual residence other than where they were staying were enumerated as of that place.

Street people--Although we did not separately identify "street people" as such in 1980 census publications, there were procedures designed to ensure their enumeration in the census. Two operations in particular were geared towards the enumeration of low-income transient persons: the M-night operation and the casual count operation. The M-night operation held on April 8th, was the night on which enumerators visited places such as flophouses, missions, and other places providing accommodations for $4 or less per night. Persons enumerated in the M-night operation were assumed to have no other residence and were enumerated where located on M-night.

The casual count operation was designated to enumerate low income transient persons who might have been missed in other census operations. In certain cities, persons at such places as employment offices, bus and train stations (if not covered in M-night), welfare offices, and certain street corners, were approached by teams of enumerators who asked whether the person had been counted in the census. If they indicated they had not been counted and had no usual residence, these persons were counted as of the casual count operation location.

8/1/85

QUESTION 26: How did the Census Bureau count our overseas military personnel in 1980? Does the Census Bureau plan to include our overseas military personnel in the count for 1990?

ANSWER: In 1970, Americans overseas were enumerated partly through the use of an Overseas Census Report (a questionnaire) and partly by administrative records. In 1980, we used the administrative counts only for the military and Federal civilian employees and their dependents. We are currently considering whether to enumerate the overseas population directly by questionnaire in 1990. The alternative is to use only administrative records.

Although the overseas population has generally been counted, it has generally not been included in the apportionment counts. The overseas population will be considered in Congressional reapportionment or state redistricting only if Congress so directs. There are, of course, numerous problems in assigning an overseas resident to a state and it would be nearly impossible to accurately assign the overseas population to sub-state residency.

8/1/85

QUESTION 27: Since the 1990 census may be highly automated and computerized, could you tell us what steps you are taking to ensure that the data collected in 1990 will be handled in a way that guards against any violation of the public's privacy?

ANSWER: The Census Bureau will establish systems that will continue to guarantee the confidentiality of census data and a clear and consistent policy for the transmission of confidential data through various levels of the system. We are examining devices that may be used to avoid the theft of software and hardware and prevent physical access as well as system access to the equipment and files. Our mainframe computers are not accessible by telephone lines from outside. We will limit putting personal data on floppy disks since it is very easy to steal or copy a disk. The computer storage media will be in a physically secured area accessible only to those employees responsible for them. Access to office sites will be carefully controlled. System access will be controlled by the use of a software system using unique identification numbers and passwords in conjunction with some state-of-the-art hardware, such as devices to identify fingerprints, magnetic badges, and so forth. Types of communications security include the use of dedicated lines and encryption devices.

Senator **Cochran**. The hearing is adjourned.

[Whereupon, the subcommittee was recessed, subject to the call of the Chair.]

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

UNITED STATES DEPARTMENT OF COMMERCE
Bureau of the Census
Washington, D.C. 20233

OFFICE OF THE DIRECTOR

FACT SHEET

Illegal Aliens and the Decennial Censuses

According to the Constitution, the decennial census is based on all persons:

- Article 1, Section 2 of the Constitution, as amended by the Fourteenth Amendment, specifically provides that "Representatives shall be apportioned among the several States according to their respective numbers, counting the whole number of persons in each State, excluding Indians not taxed."

- The most recent review of this issue by a court occurred in connection with the 1980 census. The Three-Judge District Court opinion in Federation for American Immigration Reform v. Klutznick says "It [the Constitution] requires the counting of the 'whole number of persons' for apportionment purposes, and while illegal aliens were not a component of the population at the time the Constitution was adopted, they are clearly 'persons'." [D.C.D.C. (1980) 486 F. Supp. 564] The appellate court affirmed the opinion; the Supreme Court denied plaintiffs' request to review the decision. Relevant parts of the District Court opinion are attached.

- During the 1931 debates in Congress concerning whether Congress should pass legislation excluding aliens in the census, the Congressional Legislative Counsel's Office concluded that such legislation would be unconstitutional. [71 Cong. Rec. pp. 1821-1822] (This is referenced in the attached opinion.) It was determined that "persons" as used in the Fourteenth Amendment and in the basic Constitution meant all persons without exclusion. This conclusion was drawn after a detailed analysis of the history of the Constitution and the use of basic legal analysis.

- During a discussion in April 1940 on the floor of the House on the inclusion of aliens, Congressman Emanual Cellar said "The Constitution says that all persons shall be counted.... The only way we can exclude them would be to pass a constitutional amendment." [86 Cong. Rec. 4372 (1940)] (The full quote is shown in the attached opinion.)

- The Supreme Court addressed the requirement that apportionment of the House of Representatives was to be based on total inhabitants. "The debates at the Convention make at least one fact abundantly clear: that when the delegates agreed that the House should represent 'people' they intended that in allocating Congressmen the number assigned to each State should be determined solely by the number of State's inhabitants. The Constitution embodied Edmund Randolph's proposal for a periodic census to ensure 'fair representation of the people,' an idea endorsed by Mason as assuring that 'number of inhabitants' should always be the measure of representation in the House of Representatives." [Westberry v. Sanders, 376 U.S. 1, 13 (1964)] (Footnotes omitted, underscoring added.)

By law [Title 13, United States Code], the Congress requires the tabulation of total population:

- o From 1790 to the present, Congress has recognized that the total population was to be included in the decennial census. The First Decennial Census Act, adopted in 1790, says: "Be it enacted, that every person whose usual place of abode shall be in any family on the aforesaid first Monday in August next shall be returned as of such family."
- o The current wording, "the tabulation of the total population by States", was contained in the amendment to Title 13 passed by Congress on June 18, 1929. [46 Stat. 21]

The Census Bureau conducts the decennial census as mandated by the Constitution and directed by the Congress:

- o The decennial census is based on total population. The Census Bureau does not exclude persons because of their legal status.

Attachment

Program and Policy Development Office
July 18, 1985

Opinion, *Federation for American Immigration Reform v. Klutznick*
(D.C.D.C. 1980, 486 F Supp. 564)

Furthermore, at least in the abstract, plaintiff's case appears to be very weak on the merits. The language of the Constitution is not ambiguous. It requires the counting of the "whole number of persons" for apportionment purposes, and while illegal aliens were not a component of the population at the time the Constitution was adopted, they are clearly "persons." By making express provision for Indians and slaves, the Framers demonstrated their awareness that without such provisions, the language chosen would be all-inclusive. According to James Madison, the apportionment was to be "founded on the aggregate number of inhabitants" of each state. *The Federalist*, No. 54, at 369 (J. Cooke ed. 1961). The Framers must have been aware that this choice of words would include women, children, bound servants, convicts, the insane -- and aliens, since the same article of the Constitution grants Congress the power "to establish a uniform rule of naturalization." Art. I, section 8, cl. 4. We see little on which to base a conclusion that *illegal* aliens should now be excluded, simply because persons with their legal status were not an element of our population at the time our Constitution was written.

The defendants' interpretation of the constitutional language is bolstered by two centuries of consistent interpretation. The Census Bureau has always attempted to count every person residing in a state on census day, and the population base for purposes of apportionment has always included all persons, including aliens both lawfully and unlawfully within our borders. The issue of the inclusion of aliens in the apportionment base has received explicit congressional attention, both at the time of the adoption of the fourteenth amendment and more recently. *See, e.g.*, *Cong. Globe*, 39th Cong., 1st Sess. 359 (1866) (remarks of Rep. Conkling). Although the language "the whole number of persons" finally adopted in the fourteenth amendment is identical to the original choice of words in Article I, section 2, other options were considered and expressly rejected, after considerable debate, including the options of "voters" or "citizens." While, as a political matter, the reason seems to have been that any change would have diluted the power of the New England States which had a large number of women and aliens ineligible to vote, *see* Van Alstyne, *The Fourteenth Amendment, The "Right" to Vote, and The Understanding of The Thirty-Ninth Congress*, 1965 S. Ct. Rev. 33 (1965), it was also pointed out during debate that the "non-voting classes" have a vital interest in the conduct of the Government. *Cong. Globe*, 39th Cong., 1st Sess. 141 (1866) (remarks of Rep. Blaine). In any case, it appears indisputable that Congress was aware of the all-inclusive scope of the language it was adopting.

During the first half of this century, a variety of proposals were made to exclude aliens from the apportionment base, and it appears to have been generally accepted that such a result would require a constitutional amendment.[15] See, for example, the 1929 advice from the legislative counsel for the Senate, concluding that statutory exclusion of aliens from the apportionment base would be unconstitutional. 71 Cong. Rec. 1821 (1929). In 1940, in the course of debate of the same issue, the subject of *illegal* aliens was raised. Asked whether "aliens who are in this country in violation of law have the right to be counted and represented," Representative Celler of New York responded:

> The Constitution says that all persons shall be counted. I cannot quarrel with the founding fathers. They said that all should be counted. We count the convicts who are just as dangerous and just as bad as the Communists or as the Nazis, as those aliens here illegally, and I would not come here and have the temerity to say that the convicts shall be excluded, if the founding fathers say they shall be included. The only way we can exclude them would be to pass a constitutional amendment.

86 Cong. Rec. 4372 (1940). The proposal to exclude aliens from the population base was rejected.

15/ *See*, *e.g.*, H.J. Res. 20, 71st Cong., 1st Sess. (1929); H.J. Res. 97, 72d Cong., 1st Sess. (1932).

MAKING DECISIONS ABOUT THE 1990 CENSUS

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July 16, 1985

I. TIMETABLE FOR DECISION

A. Introduction

Although census day is more than 5 years from now, key decisions about the 1990 census' content, coverage, procedures and reports will be made before the end of the 99th Congress. Practical considerations will make it increasingly difficult to change the selected strategy after the beginning of 1987. Members who would like to have an impact on the plans for the census might best formulate their proposals in light of the long lead times that are required to implement changes in modern census techniques.

This report analyzes the major issues that the Census Bureau, the Congress and the Nation will face in choosing procedures to meet the need for an accurate census. It reviews the timetable for decision making, highlights decisions that affect concerns Members of Congress have expressed in the past, and explains the constraints upon changes made shortly before census day.

B. Sources

This report is based on information provided by the Bureau of the Census[1], as well as material supplied by the National Academy of Sciences' Committee on National Statistics[2]. We also relied on the reports of statisticians who work at numerous universities as well as testimony presented at congressional hearings[3]. Papers presented at the 1985 meeting of the American Association for the Advancement of Science were also consulted[4].

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[1]. We would particularly like to thank Peter Bounpane, Bruce Johnson and Barbara Bailar.

[2]. see Citro, Constance F.and Michael L. Cohen, eds. Methodology for the Bicentennial Census: New Directions in 1990. Washington, National Academy Press. 1985. in press.

C. Activities to Date

Census Bureau planners began working on the 1990 census two years ago. Field tests of new and old procedures were held during the spring of 1985 in Tampa, Florida and Jersey City, New Jersey. More pretests are planned in 1986 and 1987. A full dress rehearsal will be held in 1988.

Because of the need to test each procedure under circumstances that are as close as possible to an actual census, inclusion of an alternative procedure in a test greatly increases the likelihood that it may be selected for the actual census. Omission of an alternative makes it very unlikely that it will be included in the census.

A committee of experts at the National Academy of Sciences [NAS] has reviewed the progress made to date[5]. The General

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[3]. U.S. Congress. House. Committee on Post Office and Civil Service. Subcommittee on Census and Population. Adjustment Procedures for Census Undercount Used in 1980 Census. Hearings, 98th Cong., 2nd Sess., April 5,13,23, 1984. Washington, U.S. Govt. Print Off., 1984.

U.S. Congress. House. Committee on Post Office and Civil Service. Subcommittee on Census and Population. Overview of the Census Bureau. Hearing, 99th Cong.,1st Sess. April 18, 1985. Washington, U.S. Govt. Print Off., 1985.

[4]. Benjamin King. Sampling in the Decennial Census. paper prepared for presentation at the meeting of the American Association for the Advancement of Science. May 1985. see also D.A. Freedman and W.C. Navidi. Regression Models for Adjusting the 1980 Census. Technical Report No. 35 Department of Statistics. University of California. Berkeley. December 1984.

[5]. Citro and Cohen.

Accounting Office has presented testimony and also issued several reports on the Bureau's plans[6]. In 1982, at the request of the Senate Governmental Affairs Subcommittee on Energy, Nuclear Proliferation and Governmental Processes, CRS held a conference of about 100 experts to consider the issues pertinent to the planning for the 1990 census[7]. Census Bureau staff have also held numerous public and private meetings with citizens, government agencies and business leaders[8]. The Bureau and the Office of Management and Budget have initiated a series of interagency committees to promote the exchange of information among Executive branch agencies.

D. Summary of the Timetable for Decisions

Decisions concerning the census will be made throughout the next several years. Five major milestones can be identified. Below we list them showing the dates when the Census Bureau currently believes it must make its final recommendations regarding each one. [Highlights of the decisions to be made are also included. A more complete discussion of the issues follows in Part II of this report.]

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[6]. U.S. General Accounting Office. A $4 Billion Census in 1990? Timely Decisions on Alternatives to 1980 Procedures Can Save Millions: Report to the Congress by the Comptroller General of the United States. GGD-82-13,Feb.22,1982. Washington, 1982.

[7]. U.S. Congress. Senate. Committee on Governmental Affairs. Subcommittee on Energy, Nuclear Proliferation and Government Processes. Federal Statistics and National Needs. Committee Print, 98th Cong., 1st Sess. Washington, U.S. Govt. Print Off., 1984. (Prepared by the Congressional Research Service)

[8]. for example see, U.S. Bureau of the Census. Stakeholders' Conference on Public Law 94-171 Program. October 1983.

Each milestone marks a major turning point in census planning and implementation. The deadlines pertain to:

1. **Procedures and Content Included in the Pretests. [September 1985]**

   Any important innovations should be included in a pretest where they can be compared to alternatives. The Bureau has already decided on the detailed plan for its 1986 pretests. Planning for 1987 is under way. The Bureau will decide upon the location and subjects of the 1987 tests by September 1985. Once these tests are fixed, it will be difficult to propose major new changes in census procedure or content.

2. **The Automation Plan. [September 1986]**

   Many of the planned procedures and improvements will require advanced automation equipment. The efficiency and success of the Bureau's plan will depend upon this effort. When automation alternatives are selected, some procedures will be foreclosed for the 1990 census. The Census Bureau plans to select its automation procedures by September, 1986 and allow the Commerce Department 3 months to approve them. The significance of this deadline for Congress lies not in the exceedingly technical matter of which automation scheme to adopt, but rather in the other issues that will be foreclosed by the selection. For example, if the Bureau's plan calls for checking census returns against lists of persons with drivers licenses, the automation plan will have to include provisions to enter the name of each person enumerated into a computer file. If the automation equipment purchased is not adequate for this procedure it cannot be included in the final plan.

3. The Dress Rehearsal
[Fall, 1986]

The 1988 dress rehearsal will be a full scale test of the procedures that will be used in 1990. All computer programming, data collection, and evaluation procedures will be included in this test in addition to the usual dry run of the field and office procedures. The Bureau also plans to simulate an adjustment of the counts and report adjusted as well as raw results. Without causing major disruptions in census procedures, only minor changes can be made between the dress rehearsal and the census. To allow for a full test, printing and preparation of materials must begin by the spring of 1987. Consequently, the decisions about the procedures and questions to be included in the 1988 dress rehearsal must be made by the end of 1986.

4. The Final Questionnaire and Procedures.
[September, 1988]

Early in 1989, the questionnaire will be sent to the printer and instructions to the temporary census workers will be prepared. At that point, all of the important procedures and questionnaire content will have been decided. Changes in procedure or question wording after this date will lead to major dislocations in the process that could slow the delivery of results or force increased costs or cancellation of parts of the Bureau's plan.

5. The Presentation of the Results Including Imputation and Adjustment.
[December 31, 1990]

Under current law [section 141 of Title 13], the Bureau is required to present the figures to be used in reapportionment on December 31, 1990. By this time, it must complete the compilation of counts for each State. Because of the need to maintain consistency, the counts for parts of States and very small areas called 'blocks' will also be compiled at the same time. Decisions about corrections in the data [imputations], and any statistical adjustment must be made in time to meet this deadline.

While the Bureau has apparently already decided that some form of imputation will be used in 1990, it is still considering whether to adjust the numbers based on its coverage evaluation. Current plans call for the staff to prepare two versions of the count -- one with adjustment and the other without it. The Director would receive these shortly before December 31, 1990. He would decide at that time which set to certify based on criteria that will be adopted in 1989 after extensive consultation with the public and Congress.

Each of these milestones depends upon the completion of research and testing. Each must be made early enough to avoid disturbing the whole procedure. Each rests upon the completion of the previous ones.

If congressional action is to be effective in promoting a more accurate and useful census, it must come well before the Bureau's deadlines which were established to allow the Bureau time to implement decisions.

The rest of this paper discusses the timing of previous censuses' decisions, provides background information about the census and explains the implications of the timetable for congressional consideration of the issues.

E. History of Decision Making

Some previous censuses were altered in the last 12 months before they began. Until 1940, census planning occurred during the last year before the census. Changes were made in the questionnaire for the 1970 census after the printer had begun producing millions of forms. In 1980, Members of Congress advocated changes in the census procedure as late as one month before census day. Hearings were held, but no further action was taken. Full consideration of these proposals was not possible. In testimony at the time, the Director of the Census Bureau cited the disruption that would be caused by proposals that otherwise might have been adopted if they had been offered earlier[*].

F. Longer Lead Times in 1990

Demands for more timely and accurate results have led the Bureau to adopt a plan for 1990 that requires earlier field work than in previous censuses. This has advanced the time when procedures will be decided and introduced longer periods for preparation prior to census day.

Users increasingly demand more precise census data. They ask for more information about smaller groups of people. The census is uniquely suited to collecting information about rare groups. For example, it provides the most detailed information about persons over age 90, those living in small towns, sparsely populated areas, and city neighborhoods. [There are too few of them included in any sample survey of the general population to provide useful data.]

In 1976, the Census Act (Title 13 of the U.S. Code) was amended to require the Bureau to issue population estimates of all governmental units every two years[10]. Of the more than 39,000 entities, the majority have fewer than 2500 people. Experience with this estimates program has shown that other sources of information may not be as good as census results for these smaller governmental units. For example, the Bureau's evaluation shows that for a large proportion of these small places, the 1970 census results were better indicators of the 1980 population than its current estimates[11].

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[*] U.S. Congress. Senate. Committee on Governmental Affairs. Subcommittee on energy, Nuclear Proliferation, and Federal Services. 1980 Census : Counting Illegal Aliens. Hearing on S.2366 96th Cong.,2nd Sess., March 26, 1980. Washington, U.S. Govt. Print Off., 1980.

U.S. Congress. House. Committee on Government Operations. Commerce, Consumer and Monetary Affairs Subcommittee. Problems with the 1980 Census. Hearing, 96th Cong., 2nd Sess., March 18, 1980. Washington, U.S. Govt. Print. Off., 1980.

More sophisticated data collection procedures and more powerful and flexible computers make it possible to respond to these demands. To take full advantage of these advances, the Census Bureau plans to begin the actual census activities two years before census day. Officials at the Census Bureau hope that with careful planning, hard work and luck the 1990 census could not only be more accurate than its predecessors, it could be more efficient -- costing less for a given amount of accuracy. The utility of census results could be increased by compiling, editing and publishing the information more quickly.

Achieving each of these goals requires an early agreement on the procedures to be implemented so that the Bureau will be left with enough time to test each procedure and position its resources to take maximum advantage of the available efficiencies.

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[10]. Public Law 94-521

[11]. David Galdi. Evaluation of 1980 Subcounty Population Estimates. Current Population Reports. Population Estimates and Projections. Series p-25, No. 963. Department of Commerce. Bureau of the Census. 1985.

G. The Congressional Schedule for Considering Census Plans

Congressional review of the Bureau's plans occurs annually in connection with the Bureau's request for appropriation. Section 11 of USC Title 13 provides the Bureau with an open-ended authorization. Oversight timing is left to the discretion of the relevant committees and subcommittees [The House Census Subcommittee, the House Government Operations Subcommittee on Commerce, Consumer, and Monetary Affairs, and the Senate Governmental Affairs Subcommittee on Energy, Nuclear Proliferation, and Government Processes have held hearings during the last decade on decennial census plans.]

Section 141 of Title 13 requires the Bureau to report on the topics it is considering including on the census in 1987 and the question wording in 1988. During the 1970s', these points were used to examine the rationale for including questions. Subsequently, changes in question wording, content and census procedures were then made[12].

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[12]. U.S. Congress. House. Committee on Post Office and Civil Service. Subcommittee on Census and Population. 1980 Census. Hearings, 95th Cong., 1977.

U.S. Congress. House. Committee on Post Office and Civil Service. Subcommittee on Census and Population. Discussion of 1980 Census Procedure. Hearing, 95th Cong., 2nd Sess., March 21, 1978. Washington, U.S. Govt. Print. Off., 1978.

If the Bureau's plans for 1990 are adhered to, this timetable would have to be advanced. Key dates [such as the deadline for inclusion of material in the dress rehearsal, and the deadline for specifying the automation plan] precede scheduled congressional consideration.

II. ISSUES FOR CONSIDERATION

This section reviews some of the issues that are likely to arise during the consideration of the plans for the 1990 census. It is not intended to be exhaustive but concentrates on some of the issues that have come up during past consideration of decennial census plans.

A. To What Extent Should the 1990 Census Reflect Past Procedure as Opposed to New Innovations?

The 1990 census will draw upon the experience gained in 200 years of census taking. Some observers believe that proven methods should be used because with U.S. censuses only taken once in 10 years, there is limited opportunity for correcting mistakes. They argue for the value of retaining comparablity by following known procedures.

Others say that a cautious approach limits the Bureau's options in responding to changing demands. They cite the controversies surrounding previous censuses, technical advances in data gathering and improved processing procedures as well as the changing conditions of the Nation.

1. Arguments for Continuity

Statisticians are usually cautious about changing past census procedures. They are concerned that innovations will fail unless they are tested under the unique operational circumstances that prevail while taking a census. It is the only governmental activity that attempts to include every person and every dwelling in the Nation. It requires a campaign to reach more than 100 million households and obtain information from each one.

A large staff of temporary workers must be hired, trained and set to their tasks in a short period of time. [Most receive low wages.] These workers constitute the government's front line forces charged with convincing sometimes reluctant householders to comply with the request for information.

With only one opportunity to try out changes every 10 years, a high risk that changes will lead to failure, and little chance of being able to repeat flubbed procedures, census planners have traditionally erred on the side of caution.

Another frequently raised argument is that changes in census procedure can reduce the utility of the results by making them less comparable with previous censuses. Many statistical and demographic procedures rely on the consistency between censuses. For example, demographic estimates of the undercount are based partly on a comparison of current census data with past data. Similarly, the population estimates that the Bureau prepares in the years between censuses rely on the consistency of results from one census to another.

Some of the problems users encounter result from changes that are made in procedures from one decade to the next. If other collectors of information have not kept up with new census rules, there may be difficulties computing key rates. For example, medical researchers who compute rates of illness among different parts of the population must frequently combine information collected by hospitals and doctors with census data. If the definitions used to identify various population groups differ, the rates are difficult to interpret.

2. Arguments for Change

On the other hand, critics of the Census Bureau as well as some of the Bureau's staff and administrators have argued that changes are required to meet the challenge of taking a census in 1990. They cite many reasons for making special efforts to consider a wide range of ideas and proposals for improving the census procedures that will be used.

Advocates of change argue that as the magnitude of the task grows, more efficient techniques are required. For the first time, it is likely that the US census will include more than 100 million households. Because the number of households is increasing at a faster rate than the number of persons, the task of conducting a census has become more difficult and costly. When the number of persons in the average household goes down, the

Bureau must contact a larger number of households to enumerate the same number of people. Therefore its work increases and, the argument concludes, changes must be made in the procedure.

Another argument for changing census procedure is that the results of the census are under greater scrutiny because they are used more precisely than in the past. Since the 1960s, census counts for very small geographic areas [called blocks] have become more available and more important. For example, the 'one man one vote' decisions of the 1960's and the Voting Rights Act require the State legislatures to meet more stringent standards when delineating congressional and State legislative districts. Those who favor change say that the new standard of precision cannot be met without altered procedures[13].

Those who favor change also say that census results have a greater effect on our economy than in the past. Businesses which sell to the public use census data [or data derived from the census] to plan their strategy. Television and radio stations, department stores, fast food chains and real estate developers use census data to decide how to commit their resources. These interests argue that their decisions have profound impact on our standard of living and that poorly collected, old or inaccurate information can cause dislocations in the economic forces that are important to each person in the Nation. For these uses, current and accurate results could be more important than results that are consistent with existing data series.

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[13]. For a technical discussion of this topic, see Eugene P. Ericksen and Joseph B. Kadane. Estimating the Population in a Census Year: 1980 and Beyond. Journal of the American Statistical Association.v.80, March 1985. p 98-108. Opposing arguments are found in the comments that follow this article, see pages 109-128.

B. Should Adjustments be Made to Improve the Accuracy of the Count?

Many of the controversies that give rise to calls for changes in census procedure result from the reported undercount of blacks and other minority groups. Some statisticians believe that in 1980 other groups might have been overcounted[14]. Any error in the count contributes to uncertainty about the accuracy of the results.

The amount of uncertainty at the National level is normally less important than possible differences in the accuracy of the count between regions, States, areas within States and groups of the population.

Some statisticians argue that a superior alternative to further increases in field operations might be to use information from statistical evaluations of the census to "adjust " the results[15]. Adjustments might reduce the differences in coverage of various groups, but critics of this approach argue that statistical adjustments would require the Bureau to exercise judgement as to which procedure was superior[16]. Such adjustment decisions [including the decision not to adjust] will affect the distribution of resources and political power. As such, they have been subject to severe partisan attack often reaching the courts[17].

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[14]. Ericksen and Kadane say "The fundamental flaw of the coverage improvement model is that procedures designed to reduce omissions not only fail to eliminate them but actually lead to erroneous inclusions." Ericksen and Kadane, page 100.

[15]. Ericksen and Kadane say "statistical estimation procedures should be used explicitly to adjust census counts and tabulations." page 108 .

1. Census Bureau's Timetable for Adjustment Decision

The current plans call for announcing the criteria for adjustment before the census but deciding whether to adjust after the results are tabulated in various ways[18]. The Census Bureau has announced that it will issue the criteria for the adjustment decision well before census day. The Bureau plans to make a draft of these standards available to interested persons in October, 1986. It will formally publish draft standards in October, 1987. It will seek formal Congressional oversight of its proposal in May, 1988 and adopt the standards by April, 1989.

Currently, the Bureau is considering several possible standards. Two important issues are being considered in this regard. First, how much of an improvement does the adjustment have to add for it to be adopted? Second, how will we be able to know the amount of improvement that is achieved?

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[16]. See for example, Barbara A. Bailar. Comment on Ericksen and Kadane. Journal of the American Statistical Association. page 109-114. Dr. Bailar writes " The bureau is committed to a participative, not a statistical, census for 1990."

[17]. After the 1980 census the Bureau was sued by more than 50 local governments and States.

[18]. The information in this section was provided by Howard Hogan, Chief, Undercount Research Staff, Statistical Research Division, U.S. Bureau of the Census.

One possibility is that these issues will be decided by examining the success of the activities that are part of the Bureau's evaluation. If they appear to be technically superior to the count, they would be used as the basis for an adjustment. Otherwise, no adjustment would be made.

2. Arguments for Adjustment

One alternative to adjustment would be to put more resources into improving the quality of the direct count. This is the strategy that was implemented in 1980. However some experts believe that the limits of this strategy were reached then. Two problems have been cited by some critics:

-- While procedures implemented before census day were cost-effective, some of the added checks that were performed were costly. One procedure cost $75 for each person added to the count[17].

-- Some critics have charged that the increased followup and checks resulted in double counting of persons who were less difficult to find. If this is correct, the additional expense might have increased rather than reduced the problem.

-- Advocates of adjustment contend that it is hard to see how even with unlimited resources, the Bureau could reach and persuade members of all groups to actively participate in the census. They say some way should be found to account for people who do not want to be count.

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[17]. Citro and Cohen. Table 5.3. The report notes that data for this table were provided by the Bureau of the Census.

- Advocates of adjustment argue that the Bureau could with some effort make use of existing or available information to complete the adjustment in time for inclusion in the counts reported to the Congress for Apportionment. However, they also sometimes argue that if delays are necessary they should be anticipated and the reporting dates should be changed.

3. Arguments Against Adjustment

On the other hand, opponents of adjustment argue that it would require the Bureau to make judgments that go beyond the information that it has. They contend:

- There are numerous procedures that could be used to adjust the census counts. The decision about which procedure to use would determine the outcome and could be a mechanism for arbitrarily deciding the number of Members of Congress different states will have.

- The Bureau's plan of having the Census Director decide from among a number of alternative sets of results places too much power in his hands. By examining these results before they are transmitted to the President, the Director could have a large influence on the distribution of political power for the next ten years. Because these critics argue that the Director would have no clear technical basis on which to make the choice, they believe that the decision could be made on political rather than statistical grounds.

- If the public were to learn that the Bureau might adjust the counts to make them more accurate, there would be less incentive to fully complete the census forms. By reducing the accuracy of the original count, this might make it more difficult to achieve an adequate result [even with adjustment.]

- An adjusted set of figures would be harder to explain and defend. The Constitution provides for an 'actual enumeration'. Adjusting would add households and persons for which there was no direct evidence. This could reduce the authenticity of the result and lead to numerous disputes.

- Opponents also argue that it is not reasonable to expect the Census Bureau to adjust the counts in the period before December 31, 1990. If adjustments were to occur after this date, they say, it might lead to two sets of counts, one used for apportionment and another used for other purposes. This could open the apportionment counts to latter challenge and might lead to public confusion.

4. Congressional Action Might be Needed for Adjustment

If the Census Bureau decides to use adjustments, there are two points where Congressional action might authorize or forbid them. The adjustment procedures being planned would require a large sample survey. This project could be separated from the census plan and funds could be appropriated for it separately giving Members an opportunity to work their will on the general principle of adjustment without having to become involved in the specific solution selected.

Another opportunity could come if the Bureau plans to use sampling in its adjustment procedure and report the totals used for apportionment based on this procedure. Section 195 of Title 13 reads:

> Section 195. Use of Sampling
>
> Except for the determination of population for purposes of apportionment of Representatives in Congress among the several States,

> the Secretary shall, if he considers it feasible, authorize the use of the statistical method known as "sampling" in carrying out the provisions of this title.

Advocates of adjustment argue that while Title 13 appears to prohibit the use of sampling for apportionment, it could be interpreted to mean that after an initial attempt to achieve a 100 percent count, the Bureau could use sampling to detect its mistakes and correct them. Opponents of adjustment have argued that section 195 prohibits the use of sampling in any aspect of the enumeration used for apportionment. Congress may decide to make its desires more specific by considering amendments to Title 13 that clarify whether sampling could be used as a part of a procedure to correct a 100 percent count.

C. Which counting rules should be used?

The rules about where to count people have a profound effect on the result of the apportionment. That procedure is sensitive to minor shifts in the population. Questions that have been raised in the past include:

1. Where should students living away from home be counted?
2. Where should persons living abroad [especially members of the Armed Services] be counted?
3. Where should persons who have more than one residence be counted?
4. Should undocumented aliens be included in the count?

D. Questionnaire Content

The census not only results in a count of the population, but has also been used as an occasion to collect information about the population[20]. Because the census tries to reach every household it can be used to collect information on very small groups of people or people living in very small jurisdictions.

The impact of asking more questions on the cost and accuracy of the count is a controversial topic. Some advocates of collecting greater amounts of information argue that its marginal cost is small compared to the cost of conducting a separate survey to obtain needed information. Others respond that given the size and complexity of the census, any additional task is costly in time and attention even if it does not increase the monetary cost of the census. Along these lines, during the past four decades Congress has considered the following questions at various times:

1. How many questions will be included on the long and short forms?
2. Should the characteristics information be collected at the same time as the count or in a separate operation?
3. Should detailed information about language ability and ethnic identity be collected? If so, for which groups?
4. How much and what kind of information should be

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[20]. John Keane. United States Decennial Census : Overview and Preview. Paper Presented at the Annual Meeting of the American Association for the Advancement of Science. June, 1985.

collected from householders about the structures in which they live?

5. What kind of income and occupational data should be collected?

6. What kind of information about citizenship and residency status should be collected?

7. Should the census collect information about the use of appliances such as televisions?

E. Timing of the Census Reapportionment and Redistricting

According to 13 USC 141, the Census Bureau is required to deliver the count of the population of the states on December 31, 1990 and the counts needed by the states for redistricting on April 1, 1991. Representatives of state governments have asked the Bureau to issue the state figures at the same time as the reapportionment results[21].

The times when the figures are released have an impact on the kinds of procedures that the Bureau can use to improve the accuracy of the count. One possibility might be to release the apportionment and redistricting numbers on March 1, 1991. This would give the Bureau an additional 3 months to announce the apportionment.

Another possibility would be to advance the date as of when the Census is conducted. A special problem in 1990 might result from the fact that April 1, 1990 is a Sunday. If the census were held as of March 1, 1990 instead, the Bureau would have one additional month to complete its tabulation.

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[21]. U.S. Bureau of the Census. Stakeholders' Conference on Public Law 94-171. October 1983.

F. Role of Patronage Jobs

In previous censuses, employment was regarded as a form of patronage. The Members of Congress who were of the same party as the President recommended workers for census jobs. 400 of these jobs were for middle management [district office directors]. However, most were for low paying positions.

P.L. 95-454 prohibited political affiliation as a consideration in the employment of federal employees including temporary workers who work on the decennial census. But in 1979 the Bureau sought and obtained an exemption from this provision to allow it to take advantage of political referral. Even then, the Bureau had difficulty filling all of its jobs. Many workers were hired regardless of political recommendation. The Bureau has announced that it will not ask for an exemption from P.L. 95-454 to cover its activities in 1990. It will thus end the practice of political referral.

III. Appendix A

The Process of Taking the Census

To understand the decisions that are to be made regarding the census, it is helpful to review the tasks that the census takers must accomplish to deliver the results to the Nation. The census has never involved a direct count of the population. Before 1850, only heads of household were listed on census forms. [Of course, a count of the number of people in the household and their description was included]. Since then, the census operations have relied on information provided by one person living in each household. Soliciting the cooperation of these informants is vital to the success of the enterprise.

Since 1960, the Bureau has followed procedures that split different tasks of enumeration into discrete steps requiring advance preparation and separate processing. The current questions about alternative procedures relate to the way those tasks are defined. All parties agree that dividing them is required if the census is to be expeditiously completed.

A. Compile List of Dwellings

The skeleton of the census is a list of the places where people live or could live. These dwellings are the targets of census workers whose efforts are directed at accounting for each one. Before 1970, census enumerators were responsible for making a list of dwellings before census day as they walked around their assigned territory. Since 1970, the Bureau has implemented a procedure that is based on gathering information about the dwellings before census day. The information for the list comes from several sources. In the past these have included:

- previous censuses,
- mailing lists that the Bureau purchased from private vendors, and
- lists compiled by census workers.

Because the success of the census depends on the completeness and accuracy of these lists, they have been the focus of close scrutiny. Bureau officials believe that these lists and the associated control procedures that they have implemented, have greatly reduced omissions due to missing housing units.

B. Prepare Maps That Can Be Used to Locate Each Housing Unit in a Specially Defined Small Census Area.

The count of the entire population is not as important as the count of people living in specific areas. To accomplish this part of the census, each dwelling must be located in a specific area. Because very detailed locations are needed, problems were common in the past. The Bureau is planning to completely automate its map production in 1990[22]. They believe that if this new system can be put in place, much of the confusion about local area counts can be corrected.

C. List the People Living in These Dwellings

Once the lists of dwellings are compiled, the next step is to prepare a roster of the people who live in these dwellings. In 1970 and 1980 most of the Nation was included in a system that involved mailing census questionnaires to households. This so-called 'mail out/mail back' system relies on householders to complete the form and mail it back to the Census Bureau for processing. As the forms are received, they are logged and enumerators approach householders who did not respond or who only provided partial information. The rest of the population is counted in the more conventional way of having an enumerator visit each household.

D. Collect Characteristics Information

As the listing of the population proceeds, the census takers also compile information about the characteristics of the population. Householders are not only asked to list the people living in their housing unit, but are also asked to describe them. In the censuses taken since 1940, the Bureau has asked a sample of the householders to provide more detailed information. The content of the questions asked determines the kinds of information that will be available for the next decade. While other surveys can provide information about the Nation and its regions, the census results can be used to describe States, cities, and small towns.

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[22]. Mark, Robert W. Developing An Automated Geographic System for Future Censuses. 1983 Proceedings of the Social Statitics Section. Washington, American Statistical Association. 1983. p 36-41.

E. Check Lists

As the lists are compiled, they are checked against several other sources of information. These include:

1. Post Office Review

The Census Bureau contracts with the Postal Service for a check of the addresses on its list. In fact, this check is done at least twice, once before census day and once at the time when forms are delivered. Postal carriers check the addresses to be sure that they are accurate and that they include all known addresses on their delivery routes. In 1980, in some rural areas, names of postal patrons were included on the lists that the Bureau compiled because the address would have been too vague without the names. In 1990, the Bureau is planning to try to include names in some urban buildings where the post office distinguishes among residents based on their name rather than an apartment number.

2. Non-household Sources

Because previous censuses were suspected to have differentially undercounted certain groups of people, the Bureau decided to initiate a new procedure in 1980 that involved checking lists of people likely to have been missed against the census roster. The lists used included driver's licence records for young people and welfare records. Bureau reports show that this program cost more than $75 for each person who was added to the census roster. In 1990, the Bureau hopes to reduce this cost by automating the procedures. But, to do this will require that Bureau workers prepare a computer record containing the name of every person living in each household that returns a questionnaire. Some statisticians argue that this process could provide more accurate and less costly information if sampling were used. Others argue that the complete process is necessary to ensure accurate counts for the required small geographic areas.

3. Vacancy Recheck

When householders do not return census forms, an enumerator visits the building to try to locate a respondent. If the dwelling is apparently vacant, the followup enumerators are instructed to report it as vacant. In 1970, the Bureau revisited 11,000 vacant housing units and found that about 8 percent of them were in fact occupied. Based on this sample estimate, corrections to the complete census were made; in 1980, all of the dwellings originally found to be vacant were revisited. If the Bureau could base its corrections on a sample, it could save money but:

* Bureau administrators believe that section 195 of Title 13 USC forbids them from doing this. [This provision was added to the law in 1976] and

* Bureau experts argue that the sampling procedure might be erroneous if the rate at which apparently vacant units were occupied varied across the Nation.

4. Last Resort Information

During the followup, when enumerators cannot find a householder to answer their questions, they are instructed to ask neighbors or building superintendents for information about the people who live in a housing unit or whether it is occupied. This last resort information is used because bureau statisticians believe that is better than counting the housing units as vacant. Some statisticians working outside of the Bureau have argued that other estimation techniques might be superior, but these would involve sampling or models.

5. Local Review Program

In 1980, the Bureau asked local officials to review the interim counts of housing units. While this program was not fully implemented in 1980, the Bureau is planning a revised procedure for 1990. Its success will depend upon obtaining specific information on problems rather than general opinions about the accuracy of the count. But, this type of information is costly to compile and may limit the effectiveness of the program in reducing census errors.

6. Special Census Procedures Such as the Casual Count

Recognizing that every person may not be attached to a household on its list, or that the membership of a person in a household may be in doubt, the Bureau has used special procedures to find people who don't live in households. These include:

a. Enumerations of people living in institutions

b. A special check of people who move during the census period

c. A count of people at hotels and other temporary quarters

d. A "casual count" of people who are likely to be missed -- such as those at welfare offices, and unemployment lines.

F. Count People Living in Small Geographic Areas

The census takers next compile the counts for people living in their assigned areas. This initial count was performed in temporary district offices up to 1980. Desk calculators were used to total the persons in each area. The plan for 1990 includes automating this procedure and integrating it with the preparation of the lists that enumerators will use during the follow-up.

G. Compile Totals

The next step is the compilation of the census results. To do this, the information from census forms must be entered into a computer. Processing is preceded by editing which in past censuses was done by individual workers examining each form for completeness and consistency. The Bureau is experimenting with computer controlled editing for 1990.

1. Process Forms

Once the forms are prepared, they must be entered into the computer. The Bureau is experimenting with an entry system that would process the forms as they were edited rather than waiting for the close of temporary district offices as was done in previous censuses. If successful, this could speed the processing of the data and contribute to earlier results. But, will require a system that can find forms which are not stored by area.

2. Imputation

When information cannot be obtained concerning some potential dwellings or only partial information is obtained, Bureau procedures call for imputing information. In this procedure, a small percentage of the results are based on substitution of the responses of one dwelling for the missed units. This procedure led to a court case in 1980 when it resulted in the shift of a Congressional House seat from Indiana to Florida. The court has ruled that it is in the purview of the Bureau under authority delegated by the Congress to decide how to treat missing information.

3. Adjustment

Because past evaluations have shown that census procedures are not perfect and some statisticians and demographers think that combining census results with other information could yield more complete answers, these experts are advocating statistical adjustments. Other experts question how results that are adjusted will serve the need for descriptions of small geographic areas and rare populations[23]. If the characteristics as well as the counts are adjusted, the impact on census operations could be substantial. On the other hand, advocates argue that adjustment is less expensive and more efficient than increased field procedures. They contend that the 1980 census made use of some procedures that added error and increased the cost of census operations.

H. Evaluate the Results

Good census procedure currently requires that results should be evaluated. This involves examining the possible sources of error and reporting on the extent to which they might affect uses of the information[24]. Demographic methods are used to compare census results to other information [such as birth, death, and immigration statistics]. Surveys are conducted to compile additional information that can be used to judge the meaning of the results. Users of census data are guided by this information.

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[23]. See above pages 16-20 for a more complete discussion of this .

I. Provide Information to the Public

Census results are printed in the Bureau's reports, issued on computer tape in the form of summary tables, and also made available in micro-fiche form. Data is shipped to state data centers, state governments, federal agencies, depository libraries as well as being sold to the public. It forms the basis of tables in the Statistical Abstract.

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[24]. The Census Bureau has conducted formal evaluations of the decennial results since the 1950 census.